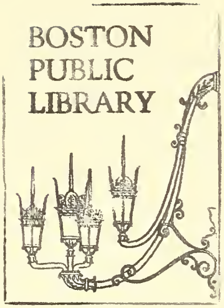

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DRAFT PROJECT IMPACT REPORT
Boston College Alumni Stadium Addition
Boston, Massachusetts

Submitted to:
Boston College

November 1993

to all outstanding tax titles, municipal or other public taxes, assessments, betterments, or liens, if any, and unpaid condominium fees and charges which are or may become a lien, if any. TERMS OF SALE Ten Thousand Dollars ($10,000.00) will be required to be paid in cash or by Bank Cashier's Check or Bank Treasurer's Check or Certified Check by the Purchaser at the time and place of sale as earnest money. The balance of the purchase price is to be paid in cash or by Bank Cashier's Check or Bank Treasurer's Check or Certified Check upon delivery of the deed within thirty (30) days of the date of sale at the office of Donald H. Carvin, Esquire, 44 Adams Street, Braintree, Massachusetts. The successful bidder to sign a Written Memorandum of Sale upon acceptance of bid. In the event that the successful bidder at the foreclosure sale shall default according to the terms of this Notice of Sale and/or fail to comply with any terms of the Memorandum of Sle executed at the time of the foreclosure, by failing to complete the purchase or otherwise, the Seller retains the option, at Seller's sole discretion, to complete the sale by selling the Premises, subject to the terms and conditions of sale state herein, to the next highest, qualified bidder. Other terms will be announced at the sale. Citicorp Mortgage, Inc., PRESENT HOLDER OF SAID MORTGAGE. By its Attorney, Donald H. Carvin. Dated: October 28, 1993. From the office of: Donald H. Carvin, Esquire, 44 Adams Street, P.O. Box 859074, Braintree, MA 02185, (617) 848-4140.

Nov 3, 10, 17

NOTICE

Pursuant to Internal Revenue Code Section 10(d) notice is hereby given that the 1992-1993 Annual Report of the Deer Polymer Charitable Foundation is available for inspection at 487 Ward St., Newton, MA 02159, (617) 527-2976, during regular business hours by any citizen who requests it within 180 days of this date.

Lawrence E: Sheftel,
Trustee

Nov 10

Somerset Street, Boston, Massachusetts. TO: Father of. A petition has been presented to this court by The Department of Social Services, seeking, as to the subject child, Michael PRENTICE, that said child be found in need of care and protection and committed to the Department of Social Services. The court may dispense with the consent of the parents to the adoption of the said child if it finds that the child is in need of care and protection and that the best interests of the child would be served by said disposition. You are hereby ORDERED to appear in this court, at the court address set forth above, on 12/01/93, at 9:00 a.m., for a PRE-TRIAL CONFERENCE. You may bring an attorney with you. If you cannot afford an attorney, the court will appoint an attorney to represent you. If you fail to appear, the court may proceed with a trial on the merits of the petition and an adjudication of the matter. For further information call the Office of the Clerk-Magistrate at (617) 725-8525. WITNESS: FRANCIS G. POITRAST, FIRST JUSTICE.

DATE ISSUED: 09/29/93

Nov 3, 10, 17

PUBLIC NOTICE

The Boston Redevelopment Authority (BRA) acting pursuant to Article 31 and Article 51 of the Boston Zoning Code, hereby gives notice that a Draft Project Impact Report (DPIR) and Institutional Master Plan Amendment has been submitted by Boston College for the proposed Boston College Alumni Stadium Addition Project at 140 Commonwealth Avenue, Brighton, MA. The DPIR may be reviewed in the BRA Library, Room 931A, Boston City Hall, Boston, MA 02210, between 9:00 a.m. and 5:00 p.m., Monday through Friday, except legal holidays. Public comments on the DPIR should be transmitted to Beverley Johnson, Assistant Director for Institutional Planning and Development at the address stated above within (30) days of this notice. BOSTON REDEVELOPMENT AUTHORITY, Joseph F. Fisher, Secretary

Nov 10

RIZZO ASSOCIATES, INC.

ENGINEERS AND ENVIRONMENTAL SCIENTISTS

235 West Central Street, Natick, MA 01760 (508) 651-3401 FAX (508) 651-1189

November 3, 1993

Mr. James P. McIntyre
Senior Vice President
Boston College - Brock House
78 College Road
Chestnut Hill, MA 02167

Re: Boston College Alumni Stadium Addition Draft Project Impact Report

Dear Mr. McIntyre:

Rizzo Associates, Inc. is pleased to submit this *Draft Project Impact Report* for the Boston College Alumni Stadium Addition Project to Boston College for submission to the Boston Redevelopment Authority. This report addresses the transportation and parking impacts of the Project, as well as other environmental issues requested by the BRA.

It has been a pleasure to provide these services for this aspect of the project to Boston College. We look forward to working with you in the future. Please call if you have any questions.

Very truly yours,

Elizabeth K. Levin
Vice President

Barry M Pell

Barry M. Pell, P.E.
Vice President

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EXECUTIVE SUMMARY

PROPOSED PROJECT:	Boston College Alumni Stadium Addition Project
PROJECT LOCATION:	Boston College, Lower Campus 140 Commonwealth Avenue Boston, MA 02167
APPLICANT:	Trustees of Boston College

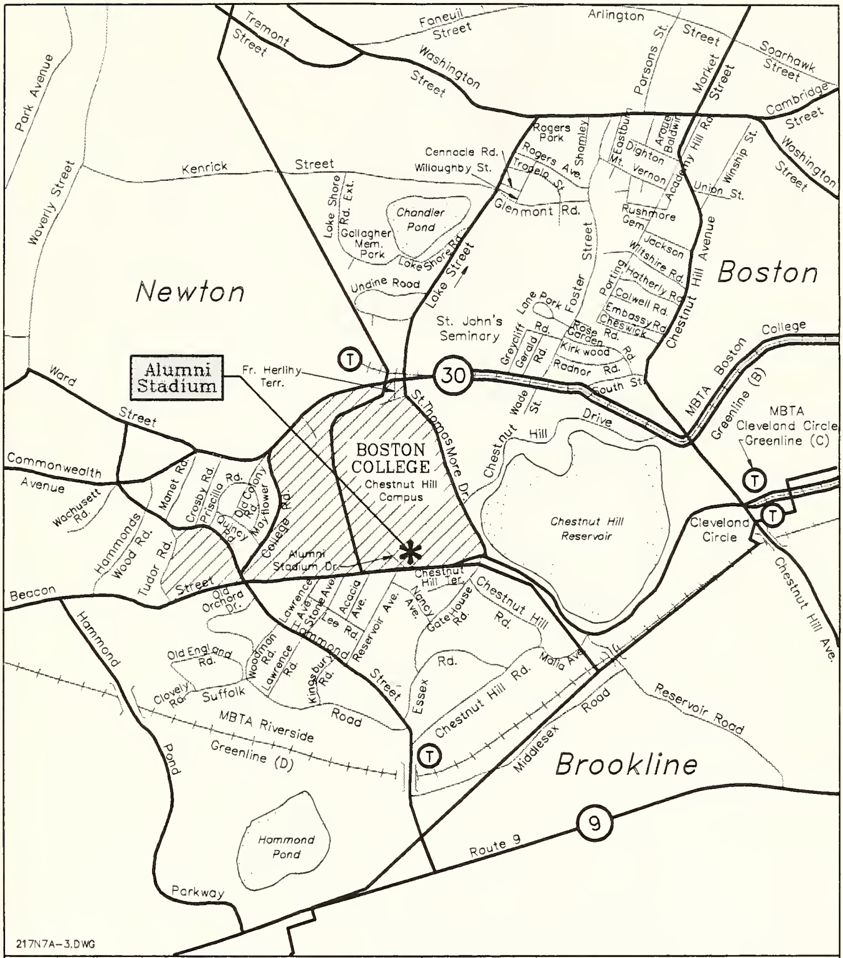
APPLICABLE REQUIREMENTS

This Draft Project Impact Report is being submitted in accordance with a Scoping Determination issued by the Boston Redevelopment Authority (BRA) pursuant to Section 31-5 of the Boston Zoning Code (the Code). The Scoping Determination, which is included in Appendix A, requests information in connection with Development Review pursuant to Article 31 of the Code and Certification of Consistency with Approved Institutional Master Plan, pursuant to Article 51 of the Code.

PROJECT DESCRIPTION

Boston College is a not-for-profit educational institution located partially in the Brighton neighborhood of Boston and partially in Newton (Figure S-1). Boston College has an enrollment of 14,000 students, of which 8,500 are full-time undergraduate students, 1,500 are part-time night school students, and 4,000 are graduate students. This enrollment has been constant since 1976 when the College decided to "cap" undergraduate full-time enrollment at 8,500. The College employs approximately 3,000 people. Boston College has achieved national prominence as an excellent academic institution with an outstanding athletic program. The proposed Alumni Stadium Addition Project is intended to make Boston College competitive with other National Collegiate Athletic Association (NCAA) Division IA football teams.

The Alumni Stadium Addition Project will increase Stadium capacity from the current 32,500 seats to 44,500 seats. The new Stadium will occupy approximately the same footprint as the original football Stadium, which is situated between the existing Conte Forum and the existing parking garage (Figures S-2 and S-3). The 20,000 existing lower-stadium seats and the existing track that encircles the football field will be removed. The 12,500 existing seats in the upper levels adjacent to Conte Forum and the parking garage will be retained. New lower stands will be constructed to encircle both end zones and sidelines. New upper-tier bleachers will be constructed to provide 2,500 additional seats at each end zone. New rest rooms and concession areas will be constructed beneath the Stadium seating. In addition, new stair and elevator towers will be located at the four corners of the Stadium and will provide handicap access to comply with the Americans with Disabilities Act.



Boston College
Alumni Stadium Addition

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Scale in Feet

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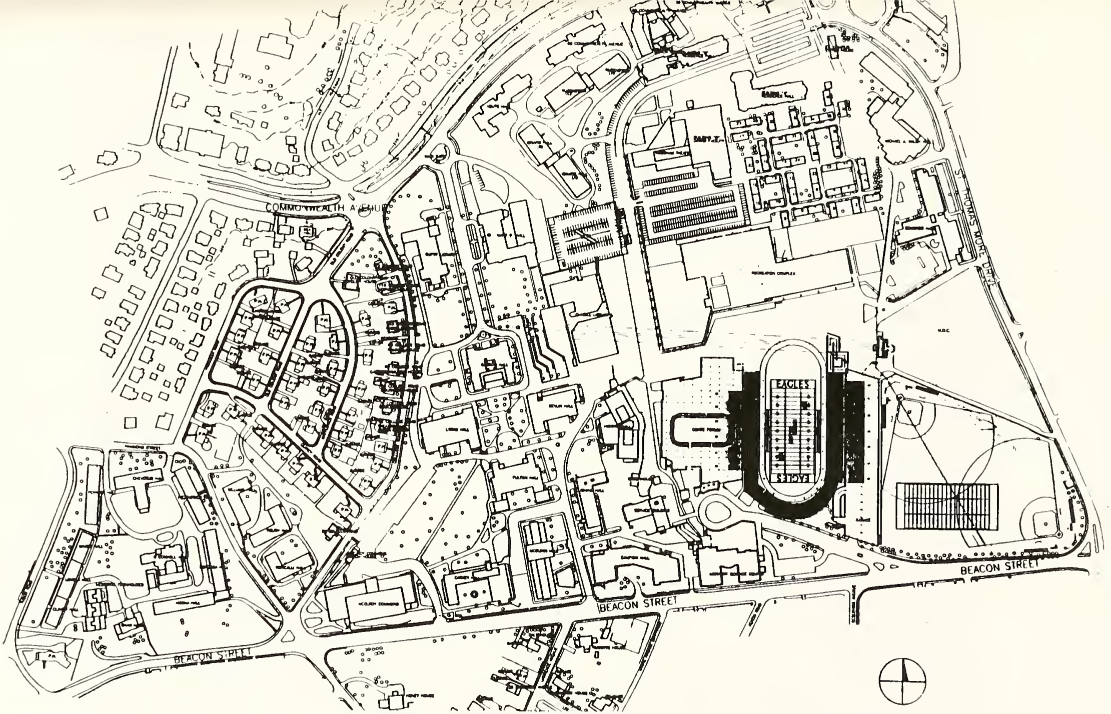
Figure S–1:

Boston College
Chestnut Hill Campus



Existing Site Plan

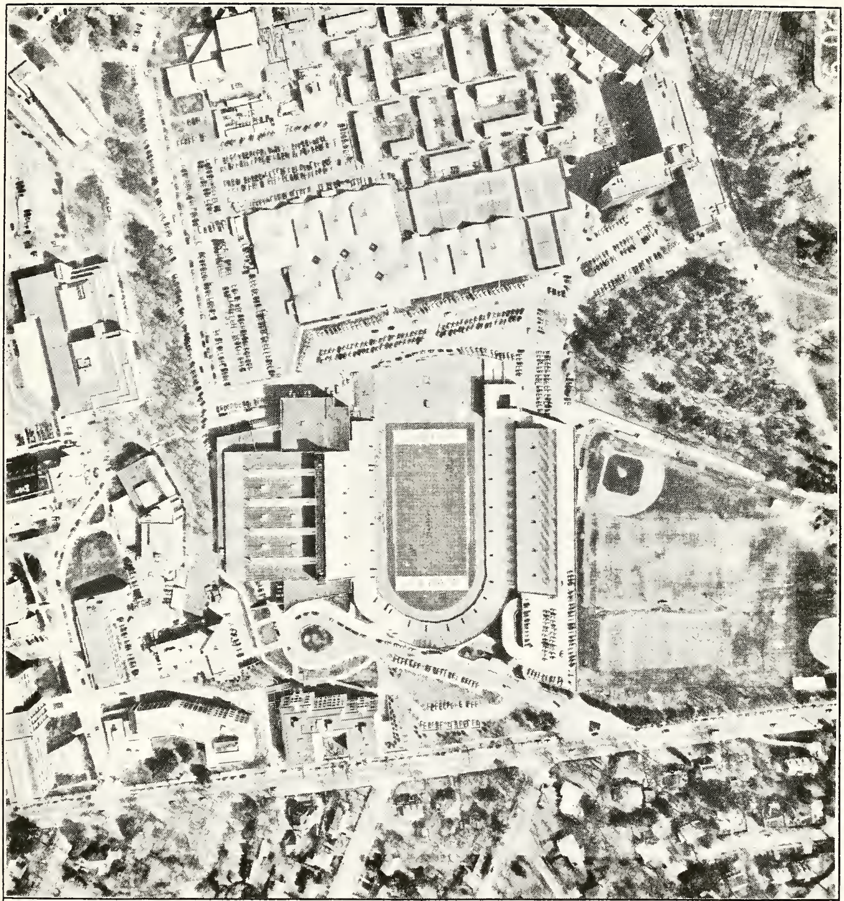
Figure S-2

Boston College

Alumni Stadium

ARC

ARCHITECTURAL RESOURCES CAMBRIDGE, INC
140 MOUNT AUBURN STREET
CAMBRIDGE MASSACHUSETTS 02138



Boston College
Alumni Stadium Addition

N

0 260
Scale in Feet

Figure S-3

Aerial Photograph of Alumni Stadium
April 20, 1993

The proposed Stadium Site Plan is shown in Figure S-4. The Stadium will be used five or six days a year for football games. It will only be used for events that are similar to those which have been held in the Stadium prior to the expansion. Boston College will not permit the use of the Stadium for other profit and non-profit events with the exception of such events as Special Olympics, high school athletic events, and other charitable functions.

IMPACTS

The major area of potential impact was determined to be Transportation (traffic circulation and parking). In all other areas the impacts of the Stadium are minor.

A detailed Transportation Management Plan was developed for the Stadium in April 1993 and was presented in the *Transportation Study – Boston College Stadium Addition* (Rizzo Associates, Inc., April 5, 1993). The transportation analysis contained within this document updates and supplements the *Transportation Study*. It incorporates traffic and parking data analyzed for the first two football games of the 1993 season (University of Miami on September 4, 1993 and Temple University on September 25, 1993) and implementation of a Transportation Management Plan (including on-street parking bans in Boston, Newton, and Brookline).

The Transportation Management Plan was implemented for the 1993 season and contains five principal components:

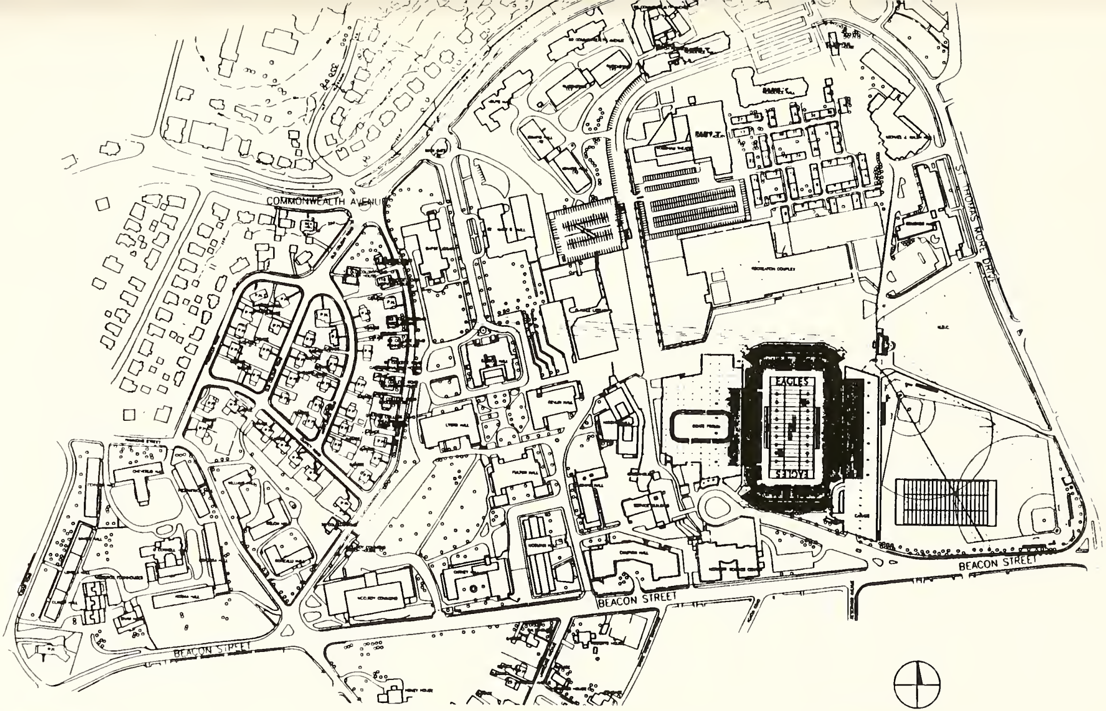
- *Parking Control Improvements* - including assignment of spectators to parking lots, reducing on-street parking and increasing the use of high-occupancy vehicle use by spectators (car-pools and a system of park-and-charter lots)

- *MBTA Service Enhancements* - including increased promotion and advertising and more frequent service

- *Traffic and Pedestrian Controls* - including provision of turning lanes at key intersections, police officer control at critical intersections and providing safe pedestrian access to the Stadium

- *Enforcement and Control Procedures* - including aggressive program of enforcement to reduce on-street parking and designation of an individual responsible for special-event transportation and parking management

- *Education and Communication Strategies* - including a program of widespread education and communication to implement above components



Site Plan October 1993

Figure S-4

Boston College

Proposed Stadium

ARC ARCHITECTURAL RESOURCES CAMBRIDGE, INC.
140 MOUNT AUBURN STREET
CAMBRIDGE MASSACHUSETTS 02138

The implementation of most of these plan elements in the 1993 season has resulted in a dramatic shift in spectator access characteristics as follows:

- *Ridership by MBTA rapid transit and buses increased by 163 percent, totaling nearly 11,000 spectators.*
- *Park-and-charter bus ridership by spectators increased by 65 percent, totaling 5,100 spectators.*
- *Spectator vehicle trips entering neighborhood streets in the Boston College area decreased by 38 percent.*
- *The number of spectators parking on-street has been reduced from 26 percent of total spectators to 2 percent of total spectators.*
- *Traffic congestion has been eliminated along major routes and at key signalized and unsignalized intersections used for spectator access.*
- *Nearly 450 enforcement personnel were used by Boston College for each football game, representing an increase of approximately 100 enforcement personnel over the 1992 season.*

For the 1994 season, with the increased seating capacity in Alumni Stadium, it is conservatively estimated that MBTA ridership will be 30 percent. In addition, Boston College is prepared to build a new Riverside "D" branch stop at the MWRA Water Works Building to be used on football game days for more convenient MBTA access. This enhancement could result in an increase in transit ridership to 35 percent.

Neighborhood traffic impacts have been eliminated by assigning parkers to specific lots (thereby ending the practice of hunting for an available space by driving from lot to lot), promoting carpooling and restricting the garage spaces to vehicles with a minimum of four occupants, and providing over 4,000 parking spaces in outlying areas with efficient connection to and from the Stadium by charter school buses. Together with the prohibition of on-street parking, the plan will achieve a reduction on game days of 1,610 spectator vehicles (24 percent) entering neighborhood streets in the Boston College area in 1994 for the Stadium expansion compared with 1992 operation. Game-related traffic (spectator vehicles and park-and-charter buses) in the Boston College area for 1992, 1993, and 1994 is summarized in Table S-1.

For 1994, the park-and-charter bus lots will have available 2,000 spaces in the Needham Industrial Park, 800 spaces at Honeywell Bull/Barry Controls in Brighton, and 1,400 spaces on the Newton Campus/Newton Country Day School. The plan estimates park-and-charter bus access by approximately 20 percent of spectators, or 2,950 spaces. Thus, Boston College is providing an excess of nearly 1,250 outlying spaces as contingency if actual

park-and-charter demand exceeds projections. In addition, Boston College will provide park-and-charter bus operation at the Wells Avenue Office Park as alternative replacement parking for any unforeseen circumstances.

TABLE S-1

ALUMNI STADIUM TRAVEL MODE DISTRIBUTION COMPARISONS

Mode of Arrival	1992[1]		1993[2]		1994[3]	
	Spectators	Modal Share	Spectators	Modal Share	Spectators	Modal Share
Automobile						
Off-street	11,600	36%	11,600	36%	16,400	37%
On-street	8,400	26%	700	2%	200	1%
MBTA	4,000	12%	10,500	32%	13,400	30%
Park-and-charter bus	3,100	10%	5,100	14%	8,800	20%
Walk-in and college buses	5,400[4]	16%	5,400[4]	16%	5,700[4]	12%
Total	32,500	100%	33,300	100%	44,500	100%

NOTES: All spectator numbers rounded to nearest 100
Vehicle trips on neighborhood streets in the Boston College area

[1] 1992: Existing Stadium before implementing Transportation Management Plan

[2] 1993: Existing Stadium after implementing Transportation Management Plan

[3] 1994: Expanded Stadium after implementing additional Transportation Management Plan features

[4] Includes 700 students from Newton Campus, who will arrive by BC shuttle bus, park-and-charter bus or walking

Table S-2 summarizes the Alumni Stadium travel mode distribution for 1992, 1993 (existing Stadium with Transportation Management Plan), and 1994 (expanded Stadium with additional Transportation Management Plan features). Based on the success of the Transportation Management Plan in 1993, its components and additional planned enhancements form a very realistic and achievable program to efficiently and safely accommodate access for the proposed Stadium expansion.

TABLE S-2

VEHICLE TRIP SUMMARY

Vehicle Type	1992[1]	1993[2]	1994[3]
Automobile	6,665	4,110	5,055
Charter Bus	80	150	160
Total	6,745	4,260	5,215

NOTE: Vehicle trips on neighborhood streets in the Boston College area

[1] 1992: Existing Stadium before implementing Transportation Management Plan

[2] 1993: Existing Stadium after implementing Transportation Management Plan

[3] 1994: Expanded Stadium after implementing additional Transportation Management Plan features

1.0 GENERAL INFORMATION

1.1 APPLICANT INFORMATION

This chapter contains basic information concerning the project, including the project team, financial and legal information, the project area, regulatory controls and permits, and community benefits.

Project Team

Owner:
Trustees of Boston College
140 Commonwealth Avenue
Chestnut Hill, MA 02167
Attn: John T. Driscoll
Vice President for Administration
Boston College – Haley House
314 Hammond Street
Chestnut Hill, MA 02167
(617) 552-8878

Legal Counsel:
Hutchins, Wheeler & Dittmar
101 Federal Street
Boston, MA 02110
Attn: John J. Griffin, Jr., Esq. – 951-1295
(617) 951-6699

Architect:
Architectural Resources Cambridge, Inc.
140 Mount Auburn
Cambridge, MA 02138
Attn: Henry S. Reeder
(617) 547-2200

Traffic and Environmental Consultant:
Rizzo Associates, Inc.
235 West Central Street
Natick, MA 01760
Attn: Elizabeth K. Levin
Barry M. Pell
(508) 651-3401

Electrical Engineers:
BR+A Consulting Engineers
1320 Soldiers Field Road
Boston, MA 02135
Attn: Louis Percoco
(617) 254-0016

Mechanical Engineers:
BR+A Consulting Engineers
1320 Soldiers Field Road
Boston, MA 02135
Attn: Allan Ames
(617) 254-0016

Plumbing Engineers:
R.W. Sullivan, Inc.
302 Union Wharf
Boston, MA 02109
Attn: Grant Anderson
(617) 523-8227

Utilities Consultant:
Charles G. Samiotes, P.E., Inc.
65 East Plain Street
Wayland, MA 01778
Attn: Charles G. Samiotes
(508) 651-0539

Structural Engineers:
Le Messurier Consultants
1033 Massachusetts Avenue
Cambridge, MA 02138
Attn: Mysore Ravindra
(617) 868-1200

Construction Manager:
Richard White and Sons
70 Rowe Street
Newton, MA 02166
Attn: Kevin Hines
(617) 332-9500

Legal Information: The owner is not aware of any legal judgments or actions pending concerning the project. The owner is the sole fee owner of the project site. No restrictive covenants are applicable to the site. There are no

public access easements into, through, or immediately surrounding the site.

1.2 FINANCIAL INFORMATION

Pro forma financial information typically required of a commercial development is not applicable here.

Boston College is considering financing alternatives for the Project.

1.3 PROJECT AREA

The property address is 140 Commonwealth Avenue, Chestnut Hill, MA 02167. The project will be located on Boston College's Lower Campus, on the north side of Alumni Stadium Driveway. The project site is situated entirely within the city of Boston.

1.4 PUBLIC BENEFITS

Boston College's Community Benefits Package includes four parts.

1. The compensation for municipal services is being negotiated according to the formula developed by Boston College and the City Assessor's Office.

2. Linkage will be developed according to the standard formula.

3. Employment benefits include a Boston Residents Construction Plan prepared in accordance with The Boston Residents Jobs Policy, effective July 12, 1985, and an Employment Opportunity Plan that will be submitted to The Mayor's Office of Jobs and Community Services. In addition, a preferential hiring policy for Allston-Brighton residents will be used for the Project. The Project will generate approximately 125 design and construction-related jobs and 125 to 150 part-time jobs on game days.

4. A supplemental community benefits package is being developed.

We also are continuing to hire Boston Police details to patrol student areas during weekends. A partial listing of other current activities in Brighton and Allston includes:

- *National Youth Sports Program*. For more than 20 years, Boston College has run a National Youth Sports Program on campus. This program includes self concept building and athletic activities. A heavy recruitment effort is made in Brighton and Allston.

- *Summer Computer Camp*. Each summer, graduate students in Boston College's School of Education offer youths from the Allston/Brighton neighborhood of Boston a

two-week computer camp. Thirty local youngsters, ages 9 to 13, have to come to Boston College during each of the past seven summers to participate in the program, which is designed to teach the practical use of computers in conjunction with independent writing projects.

- _Commonwealth Development After School Tutoring and Mentoring Program_
    - Boston College contributes to the salary of the Commonwealth Housing Coordinator who oversees this project; a Boston College donor matches this contribution.
    - Fifteen students spend a minimum of 8 to 10 hours per week through our PULSE program. Another 20 students volunteer in this project for 4 hours per week in a program run by our Chaplains Office.
    - Our students also bring their mentees to our Flynn Recreation Complex and take them to our football, basketball, and hockey games.
- _Book Donation_. Boston College donated approximately 3,000 fiction and nonfiction books to the Brighton and Faneuil branches of the Boston Public Library.
- _Edison School_. Thirty Boston College students tutor and mentor the students of this neighboring Brighton Middle School.
- _Hamilton School_. Through B.C. Teach, more than 12 students are mentoring and tutoring at the Hamilton.
- _Healthy Boston_. As part of a new initiative to improve the well-being of Boston's people and communities by integrating public and private resources to strengthen families and neighborhoods, Boston College, over the past two years, has donated the services of two social workers to assess how best to coordinate the delivery of economic development, education, health, housing, and human services to the residents of Boston.
- _Christmas in April_. Each April Boston College students, the Director of Community Affairs, members of the Alumni Association, and B.C. staff volunteer in an effort to rehabilitate the homes of low-income, elderly, and disabled Boston residents who are unable to adequately maintain their homes for financial or health reasons. The volunteers also wield tools and paint brushes to repair community centers. The Brighton Congregation Church, which houses a food pantry and feeding kitchen (where our students serve), was last April's project.
- _College Bound_. Boston College provides a four year supplemental program to assist in the preparation of urban high school students for access to and retention in four-year

colleges and universities focusing on the Brighton and West Roxbury area. Students attend enrichment classes on the College campus two Saturdays each month throughout their high school years. Students are provided with a variety of academic, college preparation, and career awareness classes. Seventeen students are enrolled in college, 15 at Boston College as a result of the program. Thirty-two students are enrolled in the program this year.

- *The Jackson Mann School and Community Center*
    - Students volunteer in the literacy program.
    - Students volunteer in the City Roots alternative high school for students who dropped out.
    - The Girls Center for nine to twelve year-olds: 10 student volunteers.
    - Preschool Program: 20 students volunteer.
    - After School Program for 50 students, age 6 to 12: 12 students volunteer.
- *Circle K Club*. The Circle K Club of Boston College consists of students committed to serving the communities surrounding the campus. The group organizes and volunteers for various projects that assist the youth, elderly, homeless, and special needs children. The club participates in an ongoing project at the Brighton Congregational Church soup kitchen, and has tutored high school students, raised funds for an Allston elementary school program, and performed cosmetic work on Roxbury church, among its many activities.
- *The Parent Center*. The Parent Center provides day care for children suffering from abuse or neglect: 8 students volunteer there.
- *The Fine House*. The Fine House is a residence for autistic adolescent boys: 4 students volunteer there.
- *St. John of God's Hospital*. Students volunteer in this rehabilitation program.
- *St. Elizabeth's Hospital*. Fifteen students volunteer in two patient visitor programs.
- *Franciscan Children's Rehabilitation Center*. Five students participate in the visitation program and also in their multi-handicapped children's program. Some students also participate in a religious education program.
- *The West End Boys and Girls Club*. Twenty-two students do after-school tutoring and mentoring.

- *Veronica Smith Senior Citizens Center*. Boston College has donated the following computer equipment: four MacPlus, four 800K Apple drives, and two Imagewriter I's. All keyboards, mice, and cables were included with the equipment and had all been cleaned and serviced prior to delivery.

- *Brighton Central Little League*. Boston College assisted the Brighton Central Little League program by providing red clay to improve the condition of the infield at McKinney Playground. This project was done in conjunction with the Boston Parks and Recreation Department who applied the clay mixture to the field.

- *Boston Parks and Recreation Department*. Each year Boston College contributes $1,000 to the Boston Parks and Recreation Department to plant trees in the Allston/ Brighton community. Sites for the tree plantings are taken from existing request lists.

1.5 REGULATORY CONTROLS AND PERMITS

Zoning

The project is located within the Boston College Institutional Subdistrict, established pursuant to Section 51-26 of the Zoning Code. In accordance with the requirements of Article 51, Boston College filed an Approved Master Plan. The Approved Master Plan was approved by the BRA on March 12, 1992 and by the Boston Zoning Commission on July 8, 1992.

As an Institutional Use, the existing Stadium is an allowed use, subject to the requirements of Article 51.

According to Article 51-43.1 of the Zoning Code, the Stadium is a "large project" situated in the Allston-Brighton Neighborhood District, and the Development Review requirements set forth in Article 31 will be applicable. The project will comply with all applicable design guidelines set forth in Section 31-8.

1. *Relationship to Subdistrict Design Features*. The project will comply with applicable BCDC subdistrict design guidelines.

2. *Quality of the Pedestrian Environment*. Pedestrian control improvements are discussed in the traffic study.

3. *Consistency with Established Design Guidelines*. The project will comply with all applicable design guidelines.

The project is a large scale development project under Section 28-4 of the Zoning Code and is thus subject to review by the Boston Civic Design Commission. The project is also subject to the Barriers Free Access Requirements of Article 30 to the Zoning Code.

Other Local Nonzoning Permits, and Approvals

City of Boston Permits and Approvals

Boston Licensing Board

- Entertainment license

Inspectional Services Department

- Building permits
- Demolition permits
- Utility installation permits
- Elevator certificates
- Excavation permit

Boston Water and Sewer Commission

- Sign off on state sewer permit application

Boston Fire Department

- Fire department permit for rubbish storage or handling (Fire Code § 29)

State Permits and Approvals

Secretary of Environmental Affairs

- Massachusetts Environmental Policy Act

  The owner has submitted an Environmental Notification Form (ENF) to the MEPA Unit of the Executive Office of Environmental Affairs for the Approved Master Plan. The Secretary of Environmental Affairs has established a Special Procedure for the Environmental Review Process in a Certificate dated May 24, 1993.

Metropolitan District Commission

- Access permit (may or may not be required)

Department of Environmental Protection

- Sewer Connection permit

Massachusetts Historical Commission

- Review of project's impact on historic properties

Federal Permits and Approvals

- National Pollution Discharge Elimination System (NPDES) permit for construction on 5+ acres.
- NPDES permit for construction dewatering (if and as necessary)

1.6 COMMUNITY GROUPS

Names and Addresses of Project Area Owners, Abutters, and Community Groups

The owner of the project site is Trustees of Boston College. The address of the College is:

Boston College
140 Commonwealth Avenue
Chestnut Hill, MA 02167

The project is surrounded by other Boston College properties. It is internal to the Boston College campus. The abutters are:

Massachusetts Water Resources Authority
Charlestown Navy Yard
100 First Street
Boston, MA 02129

Metropolitan District Commission
20 Somerset Street
Boston, MA

Several community groups are interested in or affected by the project. These groups and their memberships are listed in Table 1-1, as well as referred to in Section 9 of the Approved Master Plan.

TABLE 1-1

COMMUNITY GROUPS

Name	Address
ALLSTON-BRIGHTON/BOSTON COLLEGE COMMUNITY RELATIONS COMMITTEE	
Stephen Costello	51 Aldie Street Allston, 02134
John Camilia	10 Portsmouth Street Brighton, 02135
Donald Chalmers	19 Egremont Road Brighton, 02135
Lucy Tempesta	21 Shannon Street Brighton, 02135
Alan Morganroth	156 Lake Street Brighton, 02135
Helen Pillsbury	1875 Commonwealth Avenue Brighton, 02135
Ray Mellone	53 Coolidge Road Allston, 02134
Peter Barry	8 Melton Street Brighton, 02135
Marion Alford	40 Lake Street Brighton, 02135
Bob Dunn	30 Aldie Street Allston, 02134
Tom Miller	21 Parkvale Avenue Allston. 02134
Beverly Johnson	Boston Redevelopment Authority 1 City Hall Square Boston. 02210
Terry Cohen	8 Egremont Road Brighton, 02135
Theresa Hynes	9 Hatherly Road Brighton, 02135
NEWTON CAMPUS COMMITTEE	
Mr. Howard Gutherman	31 Rochester Road Newton. 02158
Mr. Robert Faneuil	56 Cotton Street Newton. 02158

TABLE 1-1

COMMUNITY GROUPS

Name	Address
Dr. Albert Cohen	29 Cotton Street Newton, 02158
Mr. James Wexler	22 Exmoor Road Newton, 02159
Mr. Mark D. Mancuso	34 Rochester Road Newton, 02158
CHESTNUT HILL ASSOCIATION (Directors)	
George P. Beal	15 Lee Road Chestnut Hill, 02167
H. Day Brigham, Jr.	92 Reservoir Avenue Chestnut Hill, 02167
Mrs. Phyllis Conway	37 Reservoir Avenue Chestnut Hill, 02167
Mrs. Marcia Damon	44 Old England Road Chestnut Hill, 02167
Dr. Georgiana Donato-McCormack	90 Beacon Street Chestnut Hill, 02167
Mr. Edward L. Emerson	59 Essex Road Chestnut Hill, 02167
Mr. Anne E. Flax	32 Gatehouse Road Chestnut Hill, 02167
Dr. Nancy Friedman	401 Beacon Street Chestnut Hill, 02167
Mrs. Renee Golden	83 Hammondswood Road Chestnut Hill, 02167
Mr. John L. Grandin, III	42 Lawrence Road Chestnut Hill, 02167
Ms. Patricia Otis	72 Beacon Street Chestnut Hill, 02167
Mr. Thomas J. Greytak	29 Acacia Avenue Chestnut Hill, 02167
Mr. Charles T. Haydock	59 Reservoir Avenue Chestnut Hill, 02167
Dr. Shelby Kashkat	97 Manet Road Chestnut Hill, 02167

TABLE 1-1

COMMUNITY GROUPS

Name	Address
Mrs. Agnes Korosi	54 Old Colony Road Chestnut Hill, 02167
Mr. Owen Larkin	100 Hammond Street Chestnut Hill, 02167
Mr. Thomas A. McMullin, Jr.	11 Meigh Road Chestnut Hill, 02167
Mr. Samuel D. Perry	26 Old Orchard Road Chestnut Hill, 02167
Mr. Charles E. Porter	(Tel. No. 292-1222)
Mrs. Carol Post	33 Chestnut Hill Road Chestnut Hill, 02167
Mr. Edwin Resnick	62 Manet Road Chestnut Hill, 02167
Ms. Virginia Ronan	32 Crosby Road Chestnut Hill, 02167
Boston College Community Council	
Ms. Patricia Otis	72 Beacon Street Chestnut Hill, 02167
Mr. Mark Mancuso	34 Rochester Road Newton, 02158
Mr. K. Edward Alexander	90 Sumner Street Newton Centre, 02159
Alderman Lisle Baker	137 Suffolk Road Chestnut Hill, 02167
Alderwoman Helen Robinson	54 Rochester Road Newton, 02158
Ms. Susan Glazer	Newton Planning Department Newton City Hall 1000 Commonwealth Avenue Newton, 02159

2.0 TRANSPORTATION COMPONENT

This is the major area of potential impact for the proposed Stadium Addition. A separate report has been prepared that addresses the Transportation Management Plan for Alumni Stadium and that report follows. In addition, Boston College is conducting additional traffic data collection for preparation of a Transportation Master Plan. The Transportation Master Plan, agreed to in conjunction with the approval of the Lower Campus Dormitory Project, was being developed since the summer of 1992 with the Boston Transportation Department, the Newton Planning Department, and community groups.

TRANSPORTATION STUDY UPDATE
BOSTON COLLEGE STADIUM ADDITION
Boston, Massachusetts

Submitted to:
Boston College

October 27, 1993

TRANSPORTATION EXECUTIVE SUMMARY

The objective of this report is to update and supplement the *Transportation Study – Boston College Stadium Addition* (April 5, 1993) report prepared for Boston College by Rizzo Associates, Inc. The *Transportation Study* presented a detailed Transportation Management Plan to reduce and mitigate potential impacts on local roadways and neighborhoods affected by the expansion of the Stadium. Boston College proposes to expand Alumni Stadium, located on Beacon Street, from 32,500 seats to 44,500 seats.

Subsequent to the preparation of the *Transportation Study*, Boston College has had the opportunity during this year's football season (1993) to implement and test many of the components of the mitigation plan. The plan was evaluated through a program of extensive traffic and parking-related data collection.

Moreover, the communities of Boston, Newton and Brookline have recently implemented ordinances eliminating on-street parking in the vicinity of Alumni Stadium on game days for the 1993 season. The parking bans are assumed to remain in effect for the future conditions. Therefore, the Transportation Management Plan, developed before the bans were developed, required modification to accommodate the proposed expansion.

This report presents the findings of the data collection and a modified Transportation Management Plan.

Table S-1 summarizes the testing procedures used to evaluate the five components of the Transportation Management Plan during the 1993 season and highlights the results of the evaluation. The testing procedures included traffic and parking-data collection performed on September 4, 1993 (Boston College vs. University of Miami) and September 25, 1993 (BC vs. Temple University).

An overall evaluation of the Transportation Management Plan was performed by comparing the 1992 season modal distribution of Boston College spectators to the 1993 modal distribution. The distributions, summarized in Table S-2, indicate a reduction in spectator use of on-street parking by 92 percent, an increase of MBTA ridership by spectators of 163 percent, and an increased use of park-and-charter lots by spectators of 65 percent.

Furthermore, the number of automobiles entering the immediate area surrounding Boston College on the six game days has been reduced from 6,665 vehicle trips to 4,110 vehicle trips, or by 38 percent.

In summary, the plan has been extremely successful. Spectators have been effectively educated to use the MBTA or to arrive at the Stadium in high occupancy vehicles and not to park on local roadways.

TABLE S-1

TRANSPORTATION MANAGEMENT PLAN EVALUATION PROGRAM SUMMARY

Test/Data Collection Program	Results
1. Parking Control Improvements	
• On-street parking counts before and during game	• On-street parking reduced by approximately **92 percent** from last season • 191 fewer vehicles on-street during game than before game • Approximately 350 game-related vehicles on-street during game • Approximately 100 legally-parked vehicles in Brighton/Allston with parking permits
• Vehicle counts of park-and-charter lots	• Usage of park-and-charter lots increased by **65 percent** over last year
• Bus counts traveling between park-and-charter lots and the stadium	• Buses averaged a total of 163 trips to the Stadium for the first two games • Bus occupancy averaged 40 passengers per vehicle
2. MBTA Service Enhancements	
• Passenger counts at the Boston College, Chestnut Hill and Cleveland Circle Green Line stops and bus stops closest to the stadium	• **Use of the MBTA increased by 163 percent** over last year's ridership (from 12 percent to 32 percent of total stadium spectators) with implementation of an extensive marketing program
3. Traffic and Pedestrian Controls	
• Qualitative observations of traffic and pedestrian traffic in the study area	• **No congestion on Beacon Street, Commonwealth Avenue or St. Thomas More Drive** • No significant vehicle queues at signalized intersections • No incidents of pedestrians conflicting with vehicles
4. Enforcement and Control Procedures	
• Number of security personnel counted	• **145 Police officers details on duty for each game supplemented by 292 security personnel hired by Boston College** • **100 additional police/security personnel over last year**
• Number of on-street vehicles ticketed or towed counted	• An average of 590 vehicles parked on-street were either ticketed or towed for the first two games
5. Education and Communication Strategies	
• MBTA counts and park-and-charter lot vehicle counts	• Boston College spectators were using the MBTA and park-and-charter facilities at levels exceeding all previous experience

TABLE S-2

ALUMNI STADIUM TRAVEL MODE DISTRIBUTION COMPARISONS

Mode of Arrival	1992[1]		1993[2]		1994[3]	
	Spectators	Modal Share	Spectators	Modal Share	Spectators	Modal Share
Automobile						
Off-street	11,600	36%	11,600	36%	16,400	37%
On-street	8,400	26%	700	2%	200	1%
MBTA	4,000	12%	10,500	32%	13,400	30%
Park-and-charter bus	3,100	10%	5,100	14%	8,800	20%
Walk-in and college buses	5,400[4]	16%	5,400[4]	16%	5,700[4]	12%
Total	32,500	100%	33,300	100%	44,500	100%

NOTE: All spectator numbers rounded to nearest 100

[1] 1992: Existing Stadium before implementing Transportation Management Plan

[2] 1993: Existing Stadium after implementing Transportation Management Plan

[3] 1994: Expanded Stadium after implementing additional Transportation Management Plan features

[4] Includes 700 students from Newton Campus, who will arrive by BC shuttle bus, park-and-charter bus, or walking

For the 1994 football season, the Transportation Management Plan does not require significant additional modifications. The results of this year's testing and evaluation indicate that the parking bans in Boston and Newton have been adequately compensated for by a significant increase in the use of the MBTA, park-and-charter lots, and high-occupancy vehicles.

For the 1994 season, which will be the first year with the increased seating capacity in Alumni Stadium, it is conservatively estimated that the MBTA will accommodate a minimum of 30 percent of the spectators. (This year's ridership was approximately 32 percent.) In addition, Boston College is prepared to build a new Riverside "D" branch stop at the MWRA Water Works Buildings to be used on football game days for more convenient MBTA access. This enhancement could result in an increase in transit ridership to 35 percent.

Park-and-charter lot spaces will be required to accommodate a total of 2,950 vehicles. These spaces will be located within the existing park-and-charter lots, as none of the lots were utilized to capacity for this year's games. It is estimated that Needham Industrial Park can provide 2,000 spaces, Honeywell Bull/Barry Controls 800 spaces, and Newton Campus/ Newton Country Day School 1,400 spaces, for a total of 4,200 spaces. Thus, a reserve of approximately 1,250 spaces can be utilized to fine-tune the plan if actual park-and-charter demand exceeds projections.

The anticipated mode distribution for the expanded Alumni Stadium is shown in the right side of Table S-2.

It should be noted that with implementation of the modified Transportation Management Plan and the expansion of Alumni Stadium, the number of automobile trips to the immediate area surrounding Boston College will be reduced from 6,665 in 1992 to 5,055 in 1994. *Thus, together with the prohibition of on-street parking, the plan will achieve a reduction on game days of 1,610 spectator vehicles (24 percent) entering the neighborhood streets in the Boston College area in 1994 for the Stadium expansion compared with the 1992 operation. In addition, the number of spectators parking on-street will be reduced from 26 percent of total spectators to less than 1 percent of total spectators.*

1.0 INTRODUCTION

1.1 OBJECTIVE

The objective of this report is to update and supplement the *Transportation Study – Boston College Stadium Addition* (April 5, 1993) report prepared for Boston College by Rizzo Associates, Inc. The *Transportation Study* presented a detailed Transportation Management Plan to reduce and mitigate potential impacts on local roadways and neighborhoods affected by the expansion of the Stadium. The primary goal of the Transportation Management Plan is to reduce traffic and congestion on local roadways by modifying the travel habits of Boston College's fans to Alumni Stadium. The plan focuses on encouraging ridership on public transit and the use of high-occupancy vehicles through carpooling and a system of park-and-charter lots.

Boston College has had the opportunity during this year's football season (1993) to test many of the components of the mitigation plan. During this period of testing, traffic and parking data was collected in order to evaluate the success of the implemented mitigation measures.

Subsequent to the completion of the *Transportation Study*, the communities of Boston, Newton, and Brookline implemented ordinances eliminating on-street parking in the vicinity of Alumni Stadium on game days. The parking bans require modification of the Transportation Management Plan for the expansion of the Stadium.

This report presents a revised Transportation Management Plan for the Stadium expansion that (1) reflects any modifications based on the data collected during the 1993 season, and (2) incorporates the effects of the parking bans.

1.2 METHODOLOGY

This report begins with an evaluation of each of the recommendations included in the Transportation Management Plan. The recommendations are briefly reviewed, the implementation and action plan for the 1993 season is described, and each recommendation is evaluated based on the data collection effort performed during the first two at-home games. This section of the report will conclude with a comparison of the 1992 and 1993 travel mode distribution of Boston College spectators to determine the overall effectiveness of the Transportation Management Plan.

The second part of the report will focus on modification of the Transportation Management Plan to accommodate the parking ban for the 1994 season and Stadium expansion.

1.3 STUDY AREA

As part of the evaluation of the recommended Transportation Management Plan, the study area in the *Transportation Study* was expanded to encompass the areas of the Newton, Boston,

and Brookline parking bans and the Newton Campus. The study area, depicted in Figure 1, is bounded by Washington Street to the north, Chestnut Hill Avenue to the east, Route 9 to the south, and Centre Street to the west.

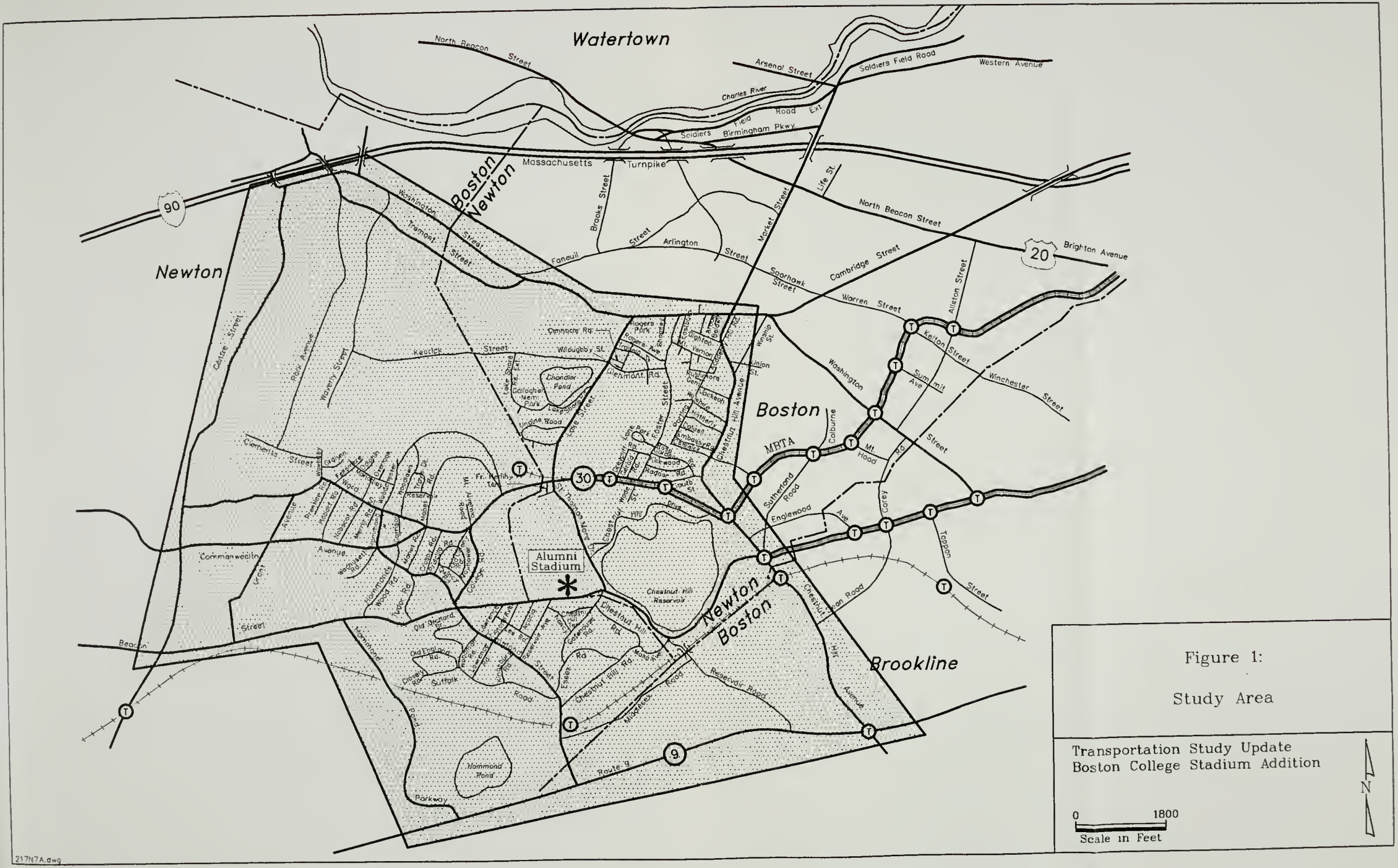


Figure 1:

Study Area

Transportation Study Update
Boston College Stadium Addition

2.0 EVALUATION OF PROPOSED TRANSPORTATION MANAGEMENT PLAN

The Transportation Management Plan presented in the *Transportation Study* incorporated five components as follows:

1. Parking Control Improvements
2. MBTA Service Enhancements
3. Traffic and Pedestrian Control Improvements
4. Enforcement and Control Procedures
5. Education and Communication Strategies

This chapter evaluates the success of each of these components based on data collected during the 1992 and 1993 football seasons and through a comparison of the 1992 and 1993 modal distribution of spectators. At the time this report was prepared Boston College had played two at-home games: BC vs. University of Miami on September 4, 1993 (kickoff at 3:30 p.m.) and BC vs Temple University on September 25, 1993 (kickoff at 12:00 p.m.). For each of these games an extensive transportation data collection program was performed, as follows:

- Ridership counts on the "B", "C", and "D" branches of the MBTA Green Line
- Passenger counts at the MBTA bus stops closest to the Stadium (Routes 51 and 86)
- Charter bus counts and surveys
- Parking lot counts
- On-street parking counts
- Vehicle occupancy surveys
- Qualitative observations

2.1 DATA COLLECTION AND ASSESSMENT OF PLAN ELEMENTS

This section includes for each plan component a brief description, the 1993 action plan for implementation, and an evaluation of effectiveness. For a more detailed description of the Transportation Management Plan, refer to the *Transportation Study*.

2.1.1 Parking Control Improvements.

Description

The Transportation Management Plan recommends that all parking on and off the campus be controlled. By controlling parking, levels of traffic can also be controlled. The parking improvements included (1) assigning spectators arriving in private vehicles to a parking lot (2) reducing the supply of on-street parking spaces by approximately 1,100 spaces and (3) increasing the use of high-occupancy vehicles. High-occupancy vehicles are defined as either vehicles with four or more occupants, or charter buses.

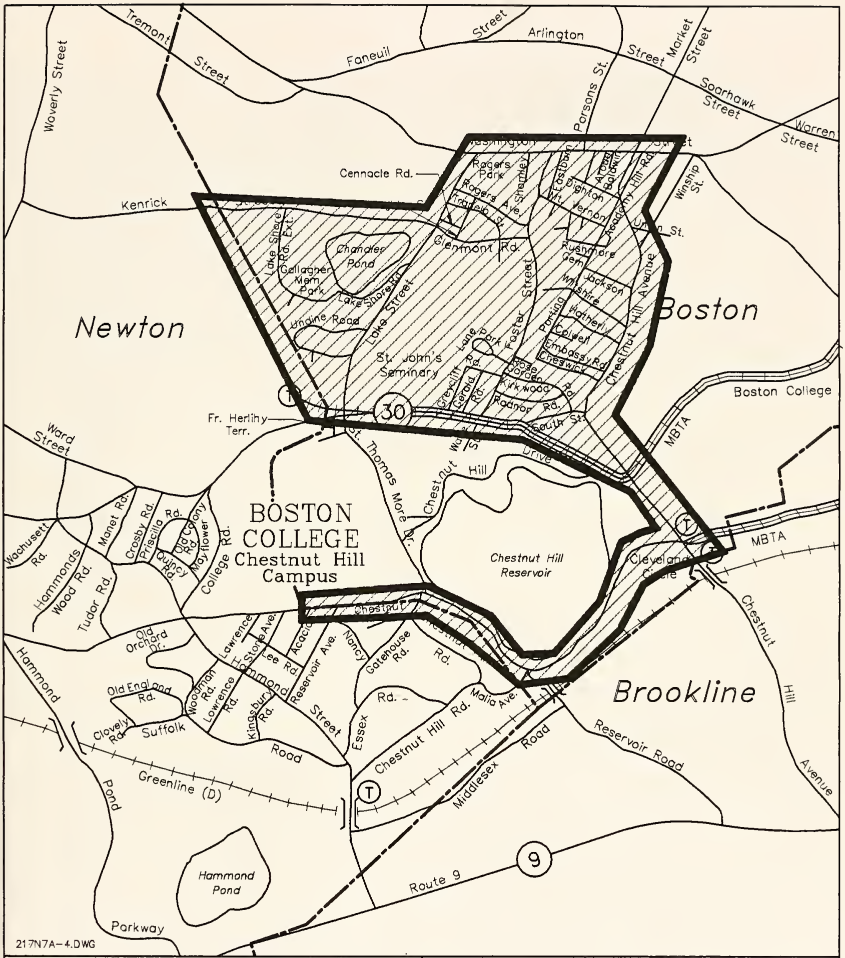
1993 Action

1. *Assignment of Parking Spaces.* For the football games of the 1993 season all parking on the Chestnut Hill campus, the Newton campus, and on St. John's Seminary is assigned to season ticket holders. For each parking pass issued, specific directions to the assigned lot are included to reduce the number of drivers stopping to ask directions. All other ticket holders are directed to park at outlying park-and-charter lots.

2. *Reducing On-street Parking Spaces.* Although the Transportation Management Plan recommended the reduction of approximately 1,100 on-street parking spaces, the communities of Boston (specifically Brighton/Allston) and Newton implemented parking bans on all streets within the vicinity of the Stadium and the Newton Campus. Figures 2 and 3 depict the streets included in the parking bans for both communities. In total, approximately 2,000 spaces were eliminated in Boston and 3,600 spaces were eliminated in Newton. The parking ordinances banned parking in Newton for all vehicles on game days between 12:00 p.m. and 5:00 p.m. and in Boston for all vehicles except those with Allston/Brighton parking permits. This effectively eliminated the estimated 2,800 on-street spaces used by Boston College spectators during the 1992 season.

3. *Increased Use of High Occupancy Vehicles.* For the 1993 season, high-occupancy vehicles were encouraged by offering parking adjacent to the Stadium and by making the use of park-and-charter lots more attractive to fans. Boston College restricted the use of its 800-car parking garage (with the exception of 68 spaces on the upper floor) to only those vehicles arriving with four or more occupants.

   In addition, Laidlaw Transit, Inc. was hired to manage and supply transportation between the Stadium and park-and-charter lots. Laidlaw Transit provided new school buses (55-passenger seating) for this purpose and as many buses as required to minimize waits for spectators. The bus routes between the satellite lots and the Chestnut Hill campus, as well as the bus stop locations, were slightly modified from



Transportation Study Update
Boston College Stadium Addition

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Scale in Feet

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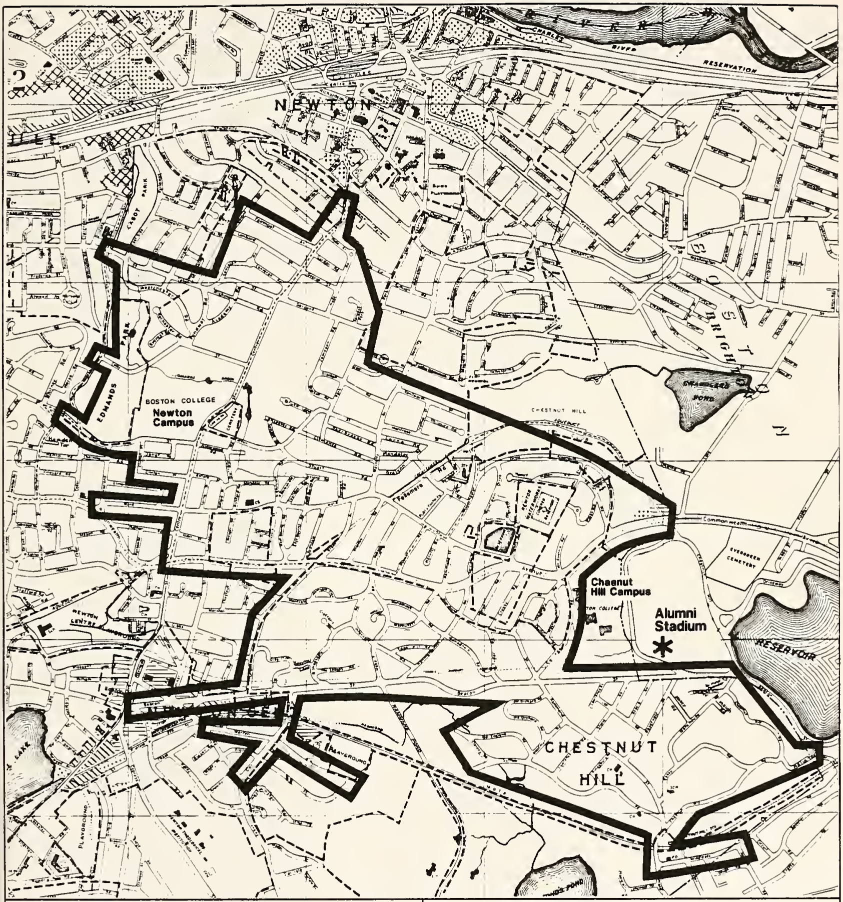
Figure 2:

Area of Boston Parking Ban



Transportation Study Update
Boston College Stadium Addition

0 600
Scale in Feet

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Figure 3:

Area of Newton Parking Ban

the recommendations presented in the *Transportation Study* based on discussions with officials of the cities of Boston and Newton. The routes and stops are shown on Figure 4. The bus stop locations were carefully selected to avoid major street crossings and to provide convenient access to the Stadium. The bus stop locations are as follows:

- _Newton Campus_. The bus stop serving the Newton campus is located in the small rotary at the intersection of Commonwealth Avenue and College Road. Buses arriving from Newton Campus turn right from Commonwealth Avenue and travel around the rotary, discharging passengers on the east side of College Road. There is adequate space in this area for up to three buses to off-load and queue without interfering with Commonwealth Avenue traffic.

- _Honeywell Bull/Barry Controls_. The Honeywell Bull/Barry Controls bus stop is located on Commonwealth Avenue, adjacent to St. Thomas More Drive. The buses arriving from the Brighton lots U-turn across the median prior to the intersection at Lake Street and discharge and pick up passengers on the south side of Commonwealth Avenue.

- _Polaroid/Needham Industrial Park_. The Polaroid/Needham Industrial Park bus stop is located at the intersection of Beacon Street/Hammond Street/College Road. Buses arriving from Polaroid/Needham Industrial Park turn left from Beacon Street onto College Road and discharge passengers across from the McElroy Commons building.

Evaluation of Effectiveness

1. *Assignment of Parking Spaces.* The assignment of spectators to parking lots was a success. This can be measured by the lack of congestion on the roadways serving Alumni Stadium. Drivers were well informed through the written information received with their tickets and parking passes.

2. *Reducing On-Street Parking Spaces.* For the 1992 season it was estimated that approximately 3,400 on-street spaces were located in both communities in the vicinity of the Stadium, of which approximately 2,800 spaces were used by Boston College fans. The Transportation Management Plan recommended eliminating approximately 1,100 spaces, used by approximately 900 Boston College fans. However, the Boston and Newton parking bans eliminated all of the 3,400 on-street spaces plus an additional 2,200 spaces.

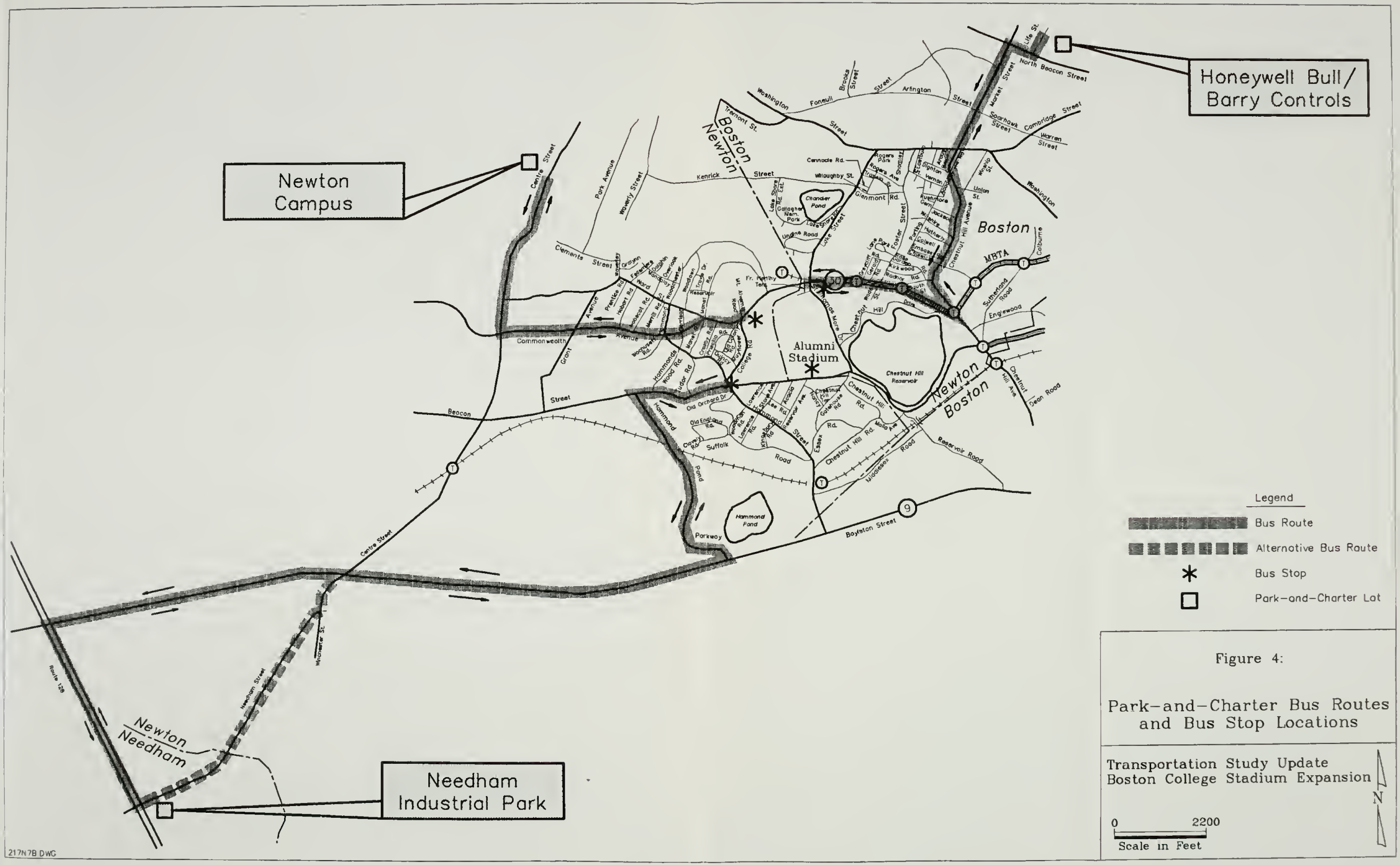


Figure 4:

Park-and-Charter Bus Routes and Bus Stop Locations

Transportation Study Update
Boston College Stadium Expansion

Parked cars were counted on streets located within the areas of the bans two hours before the September 4, 1993 kickoff and again during the game. The results of these counts are included in the Appendix and demonstrate that *191 fewer cars were parked on-street during the game than before the game*. This is the result of residents moving their cars off the street before the bans were enforced by police officers and tow trucks. The Newton Police Departments reported that 33 vehicles were ticketed and 26 vehicles were towed. The Boston Police Department report that 568 vehicles were ticketed and 48 vehicles were towed.

During the 1992 season, for sellout games, approximately 2,800 spectator vehicles were parking on-street. Thus, a significant reduction in on-street parking has been realized.

It is estimated that approximately 100 of the spectator vehicles on-street in Boston were legally parked with Brighton/Allston resident permits. Table 1 summarizes the results of the on-street parking data for both the 1992 and 1993 sellout games.

TABLE 1

ON-STREET PARKING SURVEYS

	Newton Parking Ban Area	**Boston Parking Ban Area**	**Total**
1992			
Number of vehicles parked during game	1,474	1,335	2,809
1993			
Number of vehicles parked before the game	338	1,182	1,520
Number of vehicles parked during the game	158	1,171	1,329
Change (During - Before)	-180	-11	-191
Estimated number of game-related vehicles on-street	40[1]	310[2]	350

[1] Illegally parked vehicles

[2] Includes estimated 100 spectator vehicles legally parked with resident permit.

3. *Increased Use of High Occupancy Vehicles.* The parking garage was used by vehicles with four or more occupants. Boston College parking staff enforced the policy and noted that many of the entering vehicles carried in excess of four occupants. To date only 12 vehicles have been cited for not complying with the policy.

The key component of the increase in high-occupancy vehicles was the park-and-charter system that included school buses for carrying spectators between the Stadium and the satellite parking lots. For the 1992 season, Boston College used three park-and-charter lots: Boston College Newton Campus on Centre Street and Polaroid on Needham Street in Newton; and Honeywell Bull on Life Street in Brighton. For the 1993 season Boston College maintained the Newton Campus as a parking lot, eliminated the Polaroid lot after the first game, added the Needham Industrial Park located on Needham Street in Needham, and added Barry Controls in Brighton. The Polaroid lot was eliminated due to heavy congestion on Needham Street. Hammond Pond Parkway was served by buses only for the first game. Bus service was only provided to the campus before the game at Hammond Pond Parkway.

Table 2 summarizes the number of vehicles parked in each of the park-and-charter lots for both the 1992 and 1993 seasons. As seen in the table, for the 1993 season, approximately 495 additional vehicles parked in these lots. Vehicle occupancy studies were performed during the September 4, 1993 game at Shea Field, Newton Campus, and St. John's Seminary. The results, summarized in Table 3, indicate an average occupancy of 2.99 spectators per vehicle. Thus, approximately 1,485 additional spectators (495 vehicles × 3 spectators per vehicle) used buses to travel to the stadium.

TABLE 2

PARK-AND-CHARTER LOTS

Location	Usage in 1992	Average Usage in 1993
Newton Campus	1,000	710
Honeywell Bull/Barry Controls	25	368
Polaroid	10	-
Needham Industrial Park	0	452
Total	1,035	1,530

Tables 4 and 5 summarize data collected on the park-and-charter system for the September 4 and September 25, 1993 games. This data included the number of passengers carried, the number of round trips per parking lot, the average occupancy per bus, the duration of the round trips, and the average number of round trips by bus. For the first game the charter buses carried 6,843 passengers between 1:30 p.m. and 3:30 p.m. This includes approximately 645 Newton Campus residents. Before the 3:30 p.m. kickoff, 151 bus trips were made to the Chestnut Hill Campus. The buses carried an average of 45 passengers per bus.

TABLE 3

VEHICLE OCCUPANCY STUDY – SEPTEMBER 4, 1993

Location	**Number of Occupants Per Vehicle**						
	1	**2**	**3**	**4**	**5**	**6**	**Total Vehicles Surveyed**
Shea Field	17	107	64	136	60	28	412
Newton Campus	32	112	24	31	7	2	208
St. John's Seminary	27	72	30	22	6	2	159
Total	76	291	118	189	73	32	779
Percent of Total	9.7%	37.4%	15.1%	24.3%	9.4%	4.1%	100%
Weighted Average Vehicle Occupancy = 2.99							

For the second game 6,122 passengers were bused between the Chestnut Hill campus and park-and-charter lots between 8:00 a.m. and 12:00 p.m. The reduction in passengers carried between the two games is primarily attributed to the elimination of Hammond Pond Parkway as a parking area for this game due to the Jewish holiday. Before the 12:00 p.m. kickoff, 174 bus trips were made to the Chestnut Hill campus. The buses carried an average of 35 passengers.

In summary, the data indicates that the park-and-charter lots were well-utilized and that the system designed to carry the spectators between the parking lots and Chestnut Hill campus worked efficiently.

2.1.2 MBTA Service Enhancements

Description

The Transportation Management Plan recommended that the percentage of Boston College spectators using the MBTA could be increased from the 1992 ridership of approximately 12 percent to 20 percent by (1) providing a new Riverside "D" branch stop behind the existing MWRA Water Works buildings on Beacon Street, (2) providing free MBTA passes with football tickets, (3) discounting parking fees at MBTA parking lots, and (4) increased promotion of MBTA use.

TABLE 4

CHARTER BUS DATA SUMMARY
September 4, 1993

Location/Time	Number of Passengers Carried	Total Number of Round Trips[1]	Average Number of Passengers per Bus	Duration of Round Trip (min.)	Number of Buses Assigned	Average Number of Round Trips per Bus
Newton Campus						
1:30 - 2:00 p.m.	1,153	23	50	22	18	3.3
2:00 - 2:30 p.m.	838	16	52			
2:30 - 3:00 p.m.	686	14	49			
3:00 - 3:30 p.m.	375	7	54			
Total	3,052	60	51			
Honeywell Bull						
1:30 - 2:00 p.m.	675	15	45	28	8	4.3
2:00 - 2:30 p.m.	430	10	43			
2:30 - 3:00 p.m.	350	7	50			
3:00 - 3:30 p.m.	145	3	48			
Total	1,600	35	46			
Polaroid on Needham Street						
12:30 - 1:30 p.m.	94	3	31	45	8	3.8
1:30 - 2:00 p.m.	520	12	43			
2:00 - 2:30 p.m.	384	9	43			
2:30 - 3:00 p.m.	202	4	51			
3:00 - 3:30 p.m.	142	3	47			
Total	1,342	31	43			
Polaroid in the Needham Industrial Park						
2:00 - 3:00 p.m.	275	6	46	50	4 (from Newton Campus)	1.5
Hammond Pond Parkway						
1:30 - 3:30 p.m.	574	19	30	6.5	1 (mini bus)	19
Total	6,843	151	45	–	35	–

[1] Seating capacity = 55 passengers

TABLE 5

CHARTER BUS DATA SUMMARY
September 25, 1993

Location/Time	Number of Passengers Carried	Total Number of Round Trips	Average Number of Passengers per Bus[1]	Duration of Round Trip (min.)	Number of Buses Assigned	Average Number of Round Trips per Bus
Newton Campus						
8:00 - 10:00 a.m. 10:00 a.m. - 12:00 p.m.	414 2,642	19 58	22 46	32	12	6.4
Total	3,056	77	40			
Honeywell Bull						
8:00 - 10:00 a.m. 10:00 a.m. - 12:00 p.m.	197 1,165	16 25	12 47	30	14	2.9
Total	1,362	41	33			
Polaroid in the Needham Industrial Park						
8:00 - 10:00 a.m. 10:00 a.m. - 12:00 p.m.	341 1,363	26 30	13 45	50	8	7
Total	1,704	56	30			
Total	6,122	174	35	–	34	–

[1] Seating capacity = 55 passengers

1993 Action

The recommendations to increase MBTA ridership by Boston College fans were intended to be implemented with the construction of the Stadium expansion. For the 1993 season, Boston College developed and ran an extensive marketing program to encourage MBTA ridership. The key features of this plan are as follows:

- Boston College spectators were mailed over 150,000 informational brochures and 15,000 individual letters explaining the benefits of and encouraging the use of the MBTA on game days.
- Over 150 radio spots were aired encouraging fans to "Take the T to BC."
- The MBTA posted "Take the T to BC" in subway cars and buses throughout the system.
- The Boston College football coach's show aired feature stories during prime time on network TV encouraging BC fans to "Take the T to BC."
- A consistent schedule of television advertisements was aired on network and cable TV reminding fans to take the "T."
- Signs were posted at all main entrances to the stadium encouraging MBTA use.
- "T" maps were posted at the Conte Forum ticket office.

Boston College, in cooperation with the MBTA, was able to sell MBTA tokens at its Conte Forum ticket office. Route maps and MBTA parking locations were also provided at the ticket office. Tokens and information were available and announced by public address system from a MBTA trailer parked on Fr. Herlihy Terrace. Lastly, Boston College hosted a pre-game nonalcoholic social in the Flynn Recreation Complex on Lower Campus. This event was designed to provide "T" riders a place to congregate before kickoff and to provide a substitute for tailgating. Attendance for this event averaged 5,200 spectators for each of the two games.

Evaluation of Effectiveness

To determine if the marketing strategies were effective, MBTA passenger counts were performed for the September 4, 1993 game between 12:30 p.m. and 4:00 p.m. and estimated by the MBTA between 4:00 and 5:00 p.m. (kickoff at 3:30 p.m.). The counts were performed at the Green Line stops closest to the campus: "B" line – Boston College stop, "C" line – Cleveland Circle, and "D" line – Chestnut Hill stop. Passengers were counted as they disembarked the trolleys at these locations. In addition, passengers counts were conducted at bus stops along Chestnut Hill Avenue (closest to Boston College) serving routes 51 and 86.

These buses serve north-south routes through Boston. The data was adjusted to reflect other users of the system. The adjusted data indicated that approximately 10,549 spectators used the MBTA system to travel to the game. This is equivalent to approximately 32 percent of all spectators. The count data and adjustment factors are summarized in Table 6.

TABLE 6

MBTA RIDERSHIP DATA

	"B" line Boston College Stop	**"C" line Cleveland Circle Stop**	**"D" line Chestnut Hill Stop**	**Bus Routes 51 and 86**	**Total**
Ridership between 12:30 p.m. and 5:00 p.m.	9,501	687	1,576	41	11,805
Estimated percent BC spectators	94%	60%	75%	60%	89%
Adjusted MBTA ridership	8,930	412	1,182	25	10,549

2.1.3 Traffic and Pedestrian Controls

Description

The traffic and pedestrian control improvements component of the plan included the following recommendations:

- Dedicate reversible bus/emergency vehicle lane on Commonwealth Avenue between Centre Street and College Road.
- Designate Chestnut Hill Drive as one-way northbound between Beacon Street and the entrance to Shea Field to accommodate two northbound lanes.
- Add an exclusive right-turn lane on westbound Commonwealth Avenue approaching Lake Street.
- Provide police officer control at Cleveland Circle and other critical intersections.
- Provide safe pedestrian access between the new MBTA stop behind the MWRA Water Works buildings to Alumni Stadium.
- Provide bus stops for park-and-charter buses to avoid major street crossings by passengers.

- Consolidate pedestrian crossings on Beacon Street and provide police officer control.
- Increase signage on primary access routes to the Stadium.

1993 Action

Due to the significant reduction in traffic on Commonwealth Avenue and Beacon Street resulting from the increased use of high occupancy vehicles and public transit, the reversible bus/emergency vehicle lane, designation of Chestnut Hill Drive as one-way and provision of an exclusive right-turn lane on Commonwealth Avenue were not required. However, approximately 100 police officers were hired for each game (in addition to 45 Boston College police officers) to ease traffic through key intersections (including Cleveland Circle).

None of the locations selected at the Chestnut Hill campus for spectators to board and alight park-and-charter buses involved street crossings. For each game over 5,100 passengers safely used these bus stops. Pedestrians had sidewalk access from all bus stops to the point where they turned onto the campus.

Boston College increased signage on public roadways by over 60 percent from the 1992 season. City officials were notified of the sign locations. The signs consisted of utility post-mounted maroon and gold banners as well as sidewalk sandwich boards.

2.1.4 Enforcement and Control Procedures

Description

The Transportation Management Plan recommended that a program of aggressive enforcement be implemented to ticket and tow vehicles parking illegally. The plan also recommended designating an individual responsible for special event transportation and parking management. This individual would also be responsible for developing staffing, control, and enforcement plans.

1993 Action

The Boston College Chief of Police was designated as the individual in charge of enforcement. The Chief worked closely with the Boston College Athletics Department and the state and local police departments in implementing staffing, control, and enforcement plans.

For both football games, a total of 100 police officers were hired from the state, the cities of Boston and Newton, and the towns of Brookline and Needham. The officers were posted at the key intersections (generally signalized locations) along Route 9, Beacon Street, Commonwealth Avenue, Centre Street, Hammond Street, Hammond Pond Parkway, Chestnut Hill Drive, St. Thomas More Drive, and Chestnut Hill Avenue. In addition, the police were

assisted by 45 Boston College police officers and 292 security personnel hired by Boston College to control entrances to parking lots, to perform crowd management, and to staff information details.

In total, 437 enforcement personnel were used by Boston College for each of the football games. This reflects an increase of approximately 100 enforcement personnel over the 1992 season.

Evaluation of Effectiveness

The measure of effectiveness of this component has been already discussed above under *Parking Control Improvements*. Parking counts of vehicles parking on-street clearly indicated that *the number of vehicles parked on-street during the game was less than counted two hours before the game began.* Many of the vehicles parked on-street during the game were either ticketed or towed. Table 7 summarizes by community the number of parking tickets issued and the number of vehicles towed from local roadways. For the September 4, 1993 game, on-street parking counts were performed and are also included in the table. Close to one-half of all on-street parked vehicles were ticketed or towed. It should be noted that many of the vehicles towed from Beacon Street and Commonwealth Avenue were done so at the request of Boston College for the purpose of facilitating traffic flow.

TABLE 7

PARKING ENFORCEMENT

	City of Newton Roadways	**City of Boston Roadways**	**Total**
September 4, 1993			
Tickets issued	33	530	568
Vehicles towed	26	22	48
Total on-street vehicles	158	1,171	1,329
September 25, 1993			
Tickets issued	48	470	518
Vehicles towed	16	22	38

2.1.5 Education and Communications Strategies

Description

The Transportation Management Plan recommended a program of widespread education and communication to implement the four components discussed above. Education strategies included the use of multimedia, direct communication with alumni, and pamphlets issued to all ticket purchasers. Communication strategies recommended included using an AM radio station to broadcast on game days information regarding traffic and parking, providing MBTA schedule information at the "T" parties held on-campus before kickoff, and providing parking lot attendants with information sheets to give to spectators reiterating bus schedules and passenger pick-up/discharge points.

The plan also called for the creation of a committee to evaluate the control procedures after each game. The committee would review the actual operations and suggest refinements to the Transportation Management Plan as needed.

1993 Action Plan

To educate spectators to take the MBTA and utilize the park-and-charter lots, Boston College initiated many of the recommendation of the Transportation Management Plan. Over 297,600 brochures and publications were disseminated to spectators providing information on traffic, parking, and spectator behavior. The brochures were sent to all current and prospective ticket holders. In addition, the college has kept its alumni, campus community, and neighborhood community informed about operations changes through publications and newsletters. Pamphlets were issued to all ticket purchasers that included information regarding the MBTA ("T" map, walking distances from the stations to the Stadium, and promotion of the on-campus "T" social), locations of and directions to park-and-charter lots, carpooling incentives, and directions for season ticket holders with parking permits.

Beginning two hours before the game, WEEI broadcasted traffic and parking updates every 15 minutes. The broadcasts updated spectators on potential areas of congestion and suggested alternatives.

A Traffic Advisory Committee was created and meets within three days of each game. The committee includes representatives from Boston College the Newton Fire, Police, and Planning Departments; city of Boston Police and Transportation Departments; and representatives from the Newton and Boston neighborhoods. The primary purpose of the committee is to evaluate the traffic, parking, and behavioral control measures implemented during each game and to suggest refinements to the overall plan for the next game.

Evaluation of Effectiveness

Although this component of the Transportation Management Plan cannot be quantitatively addressed, the minutes of the Traffic Advisory Committee meetings, included in the appendix, indicate that the plan as a whole was effective. The committee was effective in identifying and solving problems. For example, for the first game, vehicles entering the Polaroid lot were noted as creating congestion on Needham Street. For the second game, the Polaroid lot was replaced by the Needham Industrial Park.

2.2 OVERALL EVALUATION OF THE EFFECTIVENESS OF THE TRANSPORTATION MANAGEMENT PLAN

The evaluation of the plan has shown that each component has been implemented and successful. As the objective of the plan is to modify the travel habits of Boston College fans, the overall measure of the plans effectiveness is based on a comparison of the 1992 travel mode distribution (before the plan was developed) to the 1993 travel mode distribution. The data for the 1992 season is presented in detail in the *Transportation Study* and is summarized in Table 8 along with the 1993 data. The table shows that the only decrease in mode of arrival was in the percent of spectators arriving and parking on-street. *The number of spectators parking on-street has been reduced from 26 percent of the total spectators to 2 percent of the total spectators.* The most significant increase was in the percentage of spectators arriving by MBTA. The Transportation Study had conservatively estimated that implementation of the Transportation Management Plan would increase ridership by spectators from 12 percent to 20 percent; however, the data has shown that *ridership on the MBTA increased to 32 percent of the total spectators.* In addition, *the use of the park-and-charter lots increased by approximately 7 percent of the total spectators.*

It should be noted that the reduction in on-street parking and the increased use of the MBTA and park-and-charter lots has reduced automobile trips to the immediate area surrounding Boston College from 6,665 trips to 4,110 trips. *Thus, trips to the immediate area have been reduced by 2,555 trips or 38 percent.* Table 9 summarizes the number of trips by vehicle type to the immediate area. This reduction in traffic has been confirmed by extensive qualitative observations performed during both games. Traffic flowed smoothly on Commonwealth Avenue, Beacon Street, and St. Thomas More Drive. Traffic passed through signalized intersections efficiently and did not queue. Generally, vehicles departed the intersection within the same signal cycle of their arrival.

In summary, the plan has been extremely successful. Spectators have been effectively educated to use the MBTA or to arrive at the Stadium in high-occupancy vehicles and not to park on local roadways. A copy of the City of Newton Planning and Development Status Report on Boston College Traffic and Parking is included in the Appendix. This document, independently produced, confirms the success of the plan.

TABLE 8

ALUMNI STADIUM TRAVEL MODE DISTRIBUTION COMPARISON - 1992 to 1993

Mode of Arrival	1992		1993		Percent Change in Modal Share
	Spectators	Modal Share	Spectators	Modal Share	
Automobile Off-street On-street	 11,600 8,400	 36% 26%	 11,600 700	 36% 2%	 0% -24%
MBTA/Bus Services	4,000	12%	10,500	32%	+20%
Park-and-charter Bus	3,100	10%	5,100	14%	+4%
Walk-in or college buses	5,400[1]	16%	5,400[1]	16%	0%
Total	32,500	100%	33,300	100%	-

Note: All spectator numbers rounded to nearest 100.

[1] Includes 700 students from Newton Campus who will arrive by BC shuttle bus, park-and-charter bus, or walking

TABLE 9

VEHICLE TRIP SUMMARY

Vehicle Type	1992 trips	1993 trips	% Change
Automobile	6,665	4,110	-38%
Bus	80	150	+88%
Total	6,745	4,260	-37%

Note: Vehicle trips on neighborhood streets in the Boston College area

3.0 MODIFICATION OF THE TRANSPORTATION MANAGEMENT PLAN

For the 1994 football season the Transportation Management Plan does not require significant additional modifications. The results of this year's testing and evaluation indicate that the parking bans in Boston and Newton have been adequately compensated for by a significant increase in the use of the MBTA, park-and-charter lots, and high-occupancy vehicles.

For the 1994 season, which will be the first year with the increased seating capacity in Alumni Stadium, it is conservatively estimated that the MBTA will accommodate a minimum of 30 percent of the spectators. This year's ridership was approximately 32 percent. In addition, Boston College is prepared to build a new Riverside "D" branch at the MWRA Water Works Building, to be used on football game days for more convenient MBTA access. This enhancement could increase transit ridership to 35 percent.

The Chestnut Hill Campus, St. John's Seminary, MWRA Water Works buildings, and Hammond Pond Parkway parking lots will be utilized to capacity. These lots will provide 4,955 parking spaces accommodating approximately 16,495 spectators. As enforcement will continue to deter spectators from parking on-street, it is estimated that the 350 vehicles currently parking on-street will be reduced to 100. These 100 vehicles are considered to be legally parked with Brighton/Allston parking permits.

Park-and-charter lot spaces will be required for 2,950 vehicles. These vehicles will be located within the existing park-and-charter lots, as none of the lots were utilized to capacity for this year's games. It is anticipated that approximately 1,200 vehicles will park at the Newton Campus/Newton Country Day School in Newton, 600 vehicles will park at the Honeywell Bull/Barry Controls lots in Brighton, and 1,150 vehicles will park at the Needham Industrial Park in Needham. Each of these lots has reserve parking spaces and can be utilized to fine-tune the plan if actual park-and-charter demand exceeds projections. *In addition, Boston College will provide park-and-charter bus operations at the Wells Avenue Office Park in Newton as alternative replacement parking for any unforeseen circumstances.*

The spectators using the park-and-charter lots will be transported by school bus to the Chestnut Hill Campus. It is estimated that 161 bus trips will be made to the Chestnut Hill Campus from the park-and-charter lots. A summary of the park-and-charter lots with their parking capacity, expected utilization, and estimated number of bus trips to the Chestnut Hill campus is provided in Table 10.

The volume of spectators walking or taking college buses to the stadium will increase from 4,200 to 5,700.

The modal distribution for the expanded Alumni Stadium is shown in Table 11.

TABLE 10

PARK-AND-CHARTER LOT SUMMARY

Parking Lot	Available Spaces	Utilization of Spaces	Bus Trips
Newton Campus/Newton Country Day	1,400	1,200	65
Honeywell Bull/Barry Controls	800	600	33
Needham Industrial Park	2,000	1,150	63
Total	4,200	2,950	161

TABLE 11

ALUMNI STADIUM TRAVEL MODE DISTRIBUTION – 1994

Mode of Arrival	Spectators[1]	Modal Share
Automobile		
Off-street	16,400	37%
On-street	200	1%
MBTA/Bus Services	13,400	30%
Park-and-charter Bus	8,800	20%
Walk-in and college buses	5,700[2]	12%
Total	44,500	100%

[1] All spectator numbers rounded to nearest 100

[2] Includes 700 students from Newton Campus who will arrive by BC shuttle bus, park-and-charter bus, or walking

It should be noted that with implementation of the modified Transportation Management Plan and the expansion of Alumni Stadium, the number of automobile trips to the immediate area surrounding Boston College from 1992 to 1994 will be reduced from 6,665 trips in 1992 to 5,055 trips in 1994. *Thus, with the proposed mitigation, automobile trips to the immediate area will be reduced by 1,610 vehicle trips over 1992 conditions.* Table 12 summarizes the number of trips by vehicle type to the immediate area for the 1992, 1993, and 1994 conditions.

TABLE 12

VEHICLE TRIP SUMMARY

Vehicle Type	1992	1993	1994
Automobile	6,665	4,110	5,055
Bus	80	150	160
Total	6,745	4,260	5,215

Note: Vehicle trips on neighborhood streets in the Boston College area.

APPENDIX

ON-STREET PARKING IN BRIGHTON/ALLSTON

Data Collected 9/4/93 - 11:45 a.m. to 1:00 p.m. and 3:30 p.m. to 6:30 p.m.

File: 11

ROADWAY	NO. OF VEHICLES PARKED BEFORE GAME	NO. OF VEHICLES PARKED AFTER GAME	DIFFERENCE
Commonwealth Avenue (Lake St. to Chestnut Hill Ave.)	157	169	12
Beacon Street (Alumni Stadium Dr. to St. Thomas More)	42	0	(42)
Beacon Street (St. Thomas More to Cleveland Circle)	57	60	3
St. Thomas More Drive	42	36	(6)
Chestnut Hill Drive	183	208	25
Lake Street	20	20	0
Undine Road	19	21	2
Lake Shore Drive	12	14	2
Kenrick Street	18	20	2
Rodgers Park Road	7	7	0
Trapelo Street	7	13	6
Cennacle Road	2	2	0
Radnor Road	30	33	3
Glenmont Road	10	18	8
Eastburn Road	5	10	5
Willoughby Street	10	6	(4)
Foster Street	98	101	3
Chestnut Hill Avenue	251	206	(45)
Greycliff Road	18	26	8
Gerald Road	12	15	3
Portina Road	19	19	0
Lane Park Circle	38	25	(13)
Kirkwood Road	27	38	11
Rose Garden Road	2	0	(2)
Chiswick Road	24	23	(1)
Embassy Road	13	16	3
Colwell Road	5	5	0
Hatherly Road	10	11	1
Wiltshire Road	10	13	3
South Street	34	36	2
Total	1,182	1,171	(11)

ON-STREET PARKING ON THE
STREETS WITHIN THE CITY OF NEWTON PARKING BAN

Data Collected 9/4/93 - 8:30 a.m. to 11:30 am. and 3:30 p.m. to 6:30 p.m.

File: 2217\2217-05\10

ROADWAY	NO. OF VEHICLES PARKED BEFORE GAME	NO. OF VEHICLES PARKED AFTER GAME	DIFFERENCE
Acacia Ave.	0	0	0
Academy St.	1	0	(1)
Alden St.	3	0	(3)
Alderwood St.	2	2	0
Algonquin Rd.	26	0	(26)
Ashford Rd.	12	1	(11)
Ballard St.	0	2	2
Beacon St. (Union to Alumni Stadium Dr.)	8	7	(1)
Bishopsgate Rd.	0	0	0
Brackett St.	3	2	(1)
Burrage Rd.	0	1	1
Cabot St. (East Side to Sargent)	0	0	0
Centre St. Commonwealth to Buswell)	0	0	0
Chestnut Hill Rd.	0	0	0
Clements Rd.	3	1	(2)
Clinton Pl.	6	5	(1)
Cloverlly Rd.	0	0	0
Colby Rd.			0
College Rd.	0	0	0
Commonwealth Ave.	62	8	(54)
Commonwealth Ave. Service Rd.	29	14	(15)
Converse Ave.	1	2	1
Coolidge Rd.	5	0	(5)
Cotton St.	0	4	4

ON-STREET PARKING ON THE
STREETS WITHIN THE CITY OF NEWTON PARKING BAN

Data Collected 9/4/93 - 8:30 a.m. to 11:30 am. and 3:30 p.m. to 6:30 p.m.

File: 2217\2217-05\10

ROADWAY	NO. OF VEHICLES PARKED BEFORE GAME	NO. OF VEHICLES PARKED AFTER GAME	DIFFERENCE
Cousins Cir.	1	0	(1)
Croftdale Rd.	2	0	(2)
Crosby Rd.	4	0	(4)
Dolphin Rd.	1	0	(1)
Edge Hill Rd.	0	0	0
Essex Rd.	0	0	0
Exmoor St.	3	1	(2)
Fairmont St.	0	1	1
Fellsmere Rd.	5	2	(3)
Garden Rd.	3	2	(1)
Garrison Rd.	0	0	0
Gate House Rd.	0	0	0
George St.	9	2	(7)
Glen Ave.	0	1	1
Glendale St.	0	2	2
Grant Ave.	3	2	(1)
Gray Cliff Road	1	0	(1)
Graylynn Rd.	2	0	(2)
Hammond St.	0	0	0
Hammondswood Rd.	2	0	(2)
Hobart Rd.	0	3	3
Hyde Ave.	0	1	1
Intervale Rd.	1	0	(1)
Ireland Rd.	1	0	(1)

ON-STREET PARKING ON THE STREETS WITHIN THE CITY OF NEWTON PARKING BAN

Data Collected 9/4/93 - 8:30 a.m. to 11:30 am. and 3:30 p.m. to 6:30 p.m.

File: 2217\2217-05\10

ROADWAY	NO. OF VEHICLES PARKED BEFORE GAME	NO. OF VEHICLES PARKED AFTER GAME	DIFFERENCE
Ivanhoe St.	0	0	0
Janet St.	0	0	0
Kenilworth St.	2	2	0
Kingsbury Rd.	0	0	0
Lawrence Ave.	0	1	1
Lawrence Rd.	0	0	0
Lee Rd.	2	0	(2)
Lombard St.	4	2	(2)
Lorna St.	1	1	0
Mandalay St.	2	1	(1)
Manet Cir.	0	1	1
Manet Rd.	2	4	2
Mayflower Rd.	0	0	0
Merrill Rd.	2	1	(1)
Middlesex Rd.	5	0	(5)
Mill St.	0	0	0
Montrose St.	1	1	0
Montvale Crescent	1	1	0
Montvale Rd.	1	0	(1)
Mt.Alvernia Rd.	0	6	6
Nancy Rd.	0	0	0
Nobscot Rd.	1	0	(1)
Old Colony Rd.	0	5	5
Old England Rd.	0	0	0

ON-STREET PARKING ON THE
STREETS WITHIN THE CITY OF NEWTON PARKING BAN

Data Collected 9/4/93 - 8:30 a.m. to 11:30 am. and 3:30 p.m. to 6:30 p.m.

File: 2217\2217-05\10

ROADWAY	NO. OF VEHICLES PARKED BEFORE GAME	NO. OF VEHICLES PARKED AFTER GAME	DIFFERENCE
Old Orchard Rd.	0	0	0
Overlook Pk..	0	1	1
Prentice Rd.	9	3	(6)
Priscilla Rd.	0	0	0
Quincy Rd.	0	0	0
Reservoir Ave.	0	0	0
Reservoir Dr.	0	1	1
Richmond Rd.	2	1	(1)
Rochester St.	1	0	(1)
Sargent St. (west of Centre)	1	1	0
Sherbrooke Rd.	0	0	0
Stone Ave.	0	1	1
Stuart Rd.	10	4	(6)
Suffolk Rd.	1	2	1
Sumner (N. of Commonwealth Ave.)	7	5	(2)
The Ledges Rd.	0	0	0
Travis Dr.	0	1	1
Tudor Rd.	0	0	0
Waban Hill Rd. North	5	1	(4)
Waban Hill Rd.	2	0	(2)
Wachusett Rd.	0	1	1
Ward St.	56	18	(38)
Warren St.	2	6	4

ON-STREET PARKING ON THE
STREETS WITHIN THE CITY OF NEWTON PARKING BAN

Data Collected 9/4/93 - 8:30 a.m. to 11:30 am. and 3:30 p.m. to 6:30 p.m.

File: 2217\2217-05\10

ROADWAY	NO. OF VEHICLES PARKED BEFORE GAME	NO. OF VEHICLES PARKED AFTER GAME	DIFFERENCE
Westchester Rd.	15	4	(11)
Woodchester Dr.	0	8	8
Woodlawn Dr.	2	1	(1)
Woodman Rd.	0	0	0
W. Bourne Rd.	2	7	5
Total	338	158	(180)

MEETING
Traffic Advisory Committee

DATE: September 7, 1993

TIME: 7:30 pm

LOCATION: Shea Room

PRESENT: John Kane, Bob Morse, Chet Gladchuk, Jean McKeigue (BC), Jim Griffin (MBTA), Lou Mercuri (Newton Planning), Chief Daniele (Newton Fire), Capt. Salemme (Newton Police), John Boyle (Neighborhood), Frank Tramantozzi (Boston Traffic), Jack Harris (Brookline), Frank Moy (ABOT), Lt. Ryan (State Police), Capt. O'Malley (Boston Police), Bill Connors (neighbor)

DESCRIPTION:

Morse: Gave results of City enforcemnt:

	tickets	tows	
Boston	532	22	$40 tickets in Boston
Brookline	18	0	
Newton	35	26	Most tows at BC's request
State	0	0	

Morse: There were some overnight parkers, Boston - Beacon St.) Need to
Overnight violation for Newton) address

Traffic excellent with flow lanes

Salemme: Need to change ordinance. Need to change from 8 - 8 - He has contacted Baker

Morse: Satellite lots were used - allowed buses to flow

Salemme: Needham St. was worst bottleneck
Grove St. - Riverside stop - there was a traffic impact

Glachuk Laidlaw - 7900 people were transported
Griffin: 10,000 at Lake St. MBTA
rest at Cleveland & Chestnut Hill
13,000 used T
Salemme: Confusion on pick up and turns for shuttle at McElroy
Need new more precise route

Gladchuk: Shuttle should start earlier

Moore: 985 cars on Newton Campus

Tramontozzi: Shuttle bus
Green Briar: Used Winship St. - not Chestnut Hill Ave.
staging at Winship & Washington

Griffin: 20 2 car sets were used
Heavy volume
Customers bought token at service van — Would like to increase cars

Morse: 5 Community calls were logged
2 tailgating on Chestnut Hill Drive
student's car parked illegally
hanging plant stolen
sandwich boards for advertising

Tramontozzi Ianella complained about sandwich boards - contackt public works dept.
Ann McNeil - Public Works

Mercuri: Some tailgating on Newton Campus
No fires allowed on Newton Campus

Griffin: Great coordination between BC & T

Capt. O'Malley: Problem with Beacon St. towing

Harris: No type of public safety problem
Traffic enhancement needed- Rt. 9 in Brookline & Chestnut Hill Ave.
No MBTA problems
Cars from Reservoir "T" cannot get through

Morse: People were arriving 4 hours ahead

Glachuk: Early hour
Lisle will have to address ordinance

Mercuri: Figures of Newton Count:

St. John's	625
Newton	965
Shea	1070
Waterworks	160
More Hall	161
Polaroid	412
Bull	462
	3855

Mercuri: Retailers space used - Polaroid was a problem
Morse: People were given alternate at sight when it filled

Mercuri: Need designated lot location for out of town fans
Chief Daniele: Will deal with vendors at St. Ignatius

Mahoney: Traffic in Brighton Center - normal

Center House of Pizza disappointed at lack of business

Tramantozzi Did not tow in businesses area

Kane: Carpooling well used

Hammond Pond Pkwy. - 97 spaces used

MEETING
TRAFFIC ADVISORY COMMITTEE

DATE: SEPTEMBER 27, 1993

TIME: 7:30 p.m.

LOCATION: Shea Room

PRESENT: John Kane, Bill Mills, Chet Gladchuk, Sue Mosher, Bob Morse, Jean McKeigue - Boston College
Barry Pell (Rizzo), Jim Griffin (MBTA), Robert Chambers & James Igo (Laidlaw), Joe LaCroix (Newton Fire), Lou Mercuri (Newton Planning), Frank Tramontozzi (Boston Transportation), John Harris (Brookline Transportation), John Salemme (Newton Police) Dan Moore (Bay Colony), Matthew Spillane (Boston Police), Bob Ryan (State Police)

DESCRIPTION:

Chet Gladchuk:
Overview of game day
Satellite parking areas
a) Polaroid - Needham & park
b) Bull Information Systems
c) Traffic flow

Dan Moore:
Responsiblities
Romar lot -not in use, people directed to Bull Information Systems
St. John's - no use of 2nd field
Needham - GTE/Polaroid 200 Spaces left
730 spaces used at Newton Campus
More Hall
MWRA - 40 cars parked
No Hammond Pond parking due to Yom Kippur
350 cars at Bull Informations Systems
40 cars at Barry Controls
There were parking spaces available in every lot.

John Kane:
Meeting with Needham Ind. Park & GTE
Increased the number of shuttle buses
Needham Police pleased things went well - 508 cars parked at Nee Industrial Park & Polaroid

Bob Morse:
Needham P.D. evaluated area - 3 officers

Complaints of planes flying over stadium & parking on Upper Campus due to Yom Kippur.

The tower at Logan Airport was contacted about the planes and they left the area after being instructed to do so.

Barry Pell:
No traffic back-ups
Parking counts done at satellite lots
Next game intersection & pedestrian counts will be done

Frank Tramontozzi:
BTD reports all went well
599 tickets
25 tows

Traffic Advisory Cte.
Sept. 27, 1993
Page 2.

No congestion at intersections. BC comended for good job and fans commended also.
Banners & sandwich Board signs effective

Brookline: Jack Harris
8 tickets 0 complaints
0 tows
Trolley service was good

Capt. Salemme - Newton 48 tickets
16 tows

Prior to game sign in front of main gate - no left turn from main gate to get to Cleveland Circle, left on Hammond to Rt. 9 to Chestnut Hill Ave.
No problems in neighborhood

Lou Mercuri Coffee & donuts to those parking satellite areas
Many BC people taking T
Traffic flowed with no problem
Satellite parking areas worked well

Jim Griffin (MBTA) 12,000 rode T - 10 a.m. to game time
fan behavior good

Chet Gladchuk: Carpool No's up. - parking still available on campus & at satellite lots

Laidlaw: Buses ran early
People began to leave after 1/2 time - no delay's in getting fans back to satellite lots
30-40 minute turnaround to BC & back to lot

Bob Ryan (State Police) End of game - 2 hrs Shea Field was cleared

Taxi cabs - people looking for cabs, Police waived down cabs.
Tailgate on Chesnut Hill Drive - state addressed

Chet: Riders getting off on B line & eating in Cleveland Circle. Numbers need to be taken

Lt. Ryan: Tailgates allowed at Harvard on Soldiers Field Rd. which is also MDC parkland. The law states the MDC can regulate & allow cookouts on Chestnut Hill Driveway

Newton Fire Capt. No cars on side streets
Some traffic on Ward St. near Temple because of services.

Sgt. Spillane: Marion Alford called Capt. O'Malley to compliment her on the good job by Boston Police. Will speak to Capt. about vendors around stadium on game days. They should not be allowed.

Bill Connors: BC Neighbor - no problems, more traffic at Lake & Washington during A/B parade than BC football game. Keep up the good work. He said all neighbors at the far end of Lake Street are pleased with the traffic siutation

Next meeting : 7:00 pm, October 25, 1993 in Shea Room

CITY OF NEWTON, MASSACHUSETTS
City Hall
1000 Commonwealth Avenue
Newton, Massachusetts 02159
Telephone: (617) 552-7135 Telecopier: (617) 965-6620

DEPARTMENT OF PLANNING AND DEVELOPMENT
Eugene A. Bober, Director

October 14, 1993

TO: Mayor Theodore D. Mann
Board of Aldermen

FROM: Lou Mercuri, Planner
Current Planning Division

SUBJECT: Status Report on Boston College Traffic and Parking - re Miami Game September 4, 1993 and Temple Game September 25, 1993

I would like to take this opportunity to present information and findings regarding the parking and traffic conditions at the Boston College - Miami football game on September 4 and the Boston College - Temple game on September 15, 1993. As we continue to monitor each game throughout the season, it is my intent to provide additional reports and updates. Overall, the College is to be commended for its intensive efforts to make traffic and parking work in the area. This could not have been accomplished without the massive public relations and education program put in place prior to the first game. Although there were some problems, it will be possible to fine tune the game day operations with input and coordination from local officials from Newton, Boston, and Brookline.

EXECUTIVE SUMMARY

For the most part, the extensive media coverage and information blitz regarding both games paid off. Several areas worked particularly well. They were:

1. The City's parking ban effectively kept game day parking and traffic around the stadium to a minimum.

2. The use of the Law School Campus for satellite parking worked in terms of traffic moving smoothly along Centre Street throughout the day. By pre-assigning parking and providing clear directions to this location, confusion was nearly eliminated.

3. The use of reversible lanes along Beacon Street and Commonwealth Avenue combined with the enforcement of the parking ban in these areas enabled through and stadium related traffic to pass without delays.

4. From general observations an increased percentage of patrons used MBTA service when compared to previous seasons. This contributed to the decrease in auto related traffic in the neighborhoods around the stadium.

5. The willingness of unassigned fans to use the Polaroid parking facility on Needham Street during the Miami game. As a result of traffic congestion problems along Needham Street the College secured use of the Polaroid site within the Needham Industrial Park for the Temple game. Further efforts to use the Needham Industrial Park or other remote satellite locations needs to be encouraged. Finally, assigning as many fans as possible to specific lots will reduce the temptation to drive to the stadium and encourage ridesharing.

6. The cooperation and coordination among BC officials, the respective Police Departments, City Officials and Game Day Staff was highly commendable.

Some fine tuning as the season progresses will hopefully reduce game day problems. City officials attended the first "post mortem" sponsored by the College on September 7 and September 27 to discuss issues of mutual concern. These meetings will occur on the Monday following each of the home games during the season.

A. Effect of On-Street Parking Ban

Miami Game

All of the "No Parking - Tow Zone" signs were in place on all affected streets prior to game time. Overall compliance with the new regulations appeared to be high, particularly on the residential streets away from Commonwealth Avenue and Beacon Street. A total of 26 vehicles were towed and 35 tickets were issued by the Newton Police Department between 12 Noon and 5:00 P.M. on game day. By comparison, the City of Boston issued 532 tickets with 22 tows and the Town of Brookline issued 18 tickets in their affected areas. The great majority of vehicles towed in Newton were removed from Commonwealth Avenue in front of the College and from Algonquin Road. The visibility of the Police at all the key intersections along Beacon Street and Commonwealth Avenue helped dissuade drivers from searching for parking along residential streets on either side of the main routes.

Of concern prior to the game was the possibility that drivers would try to find the streets where parking was legal adjacent to the tow zone area. A check of these streets during the game revealed very few cars parked at these outer perimeter locations. This situation needs to be watched closely since it appeared many residents were away during the holiday weekend which kept cars off the streets. Additional visible cars on these streets may present an opportunity for football game parkers to search for parking.

Temple Game

Once again, overall compliance showed that the parking restrictions have been a success. The City of Newton towed 16 vehicles and ticketed 48, a decrease of 10 tows but an increase of 13 tickets. Most towing occurred along Commonwealth and the Carriage Road in front of the college. Statistics regarding Boston and Brookline traffic enforcement are included in Appendix II.

Since the game fell on Yom Kippur, considerable attention was paid to the parking and traffic situation in the area around Temple Emanuel. Members of the congregation were instructed to avoid parking on the restricted streets in close proximity to the Temple. This notification strategy and worked as very few cars were parked on these streets. The Police Department was alerted to the situation and

they were careful about enforcement in the area. The warm sunny weather provided further opportunities for people to walk to services rather than drive. In any event, there appeared to be no effort by football game patrons to park near the temple.

As with the Miami game, we monitored streets just outside the ban for additional parking caused by football game spectators. It appears that very few cars availed themselves of this possibility and at this time, there is no necessity to expand the area included by the ban.

B. Private Paid Parking - Residential Areas

From observation, at least three residential properties had set up game day parking lots for a fee in the area covered by the tow zone. These parking areas are being set up in apparent violation of the city's zoning ordinance which prohibits parking of this nature in residential zones. Efforts to enforce these provisions are being coordinated with the Inspectional Services Department at this time. In response to these efforts, there were apparently no private parking areas in operation during the Temple game.

C. Use of Satellite Parking

1. Polaroid Location - 155 Needham Street

Miami Game

Boston College had prepared this and other satellite parking locations for ticket holders who had not been pre-assigned to a specific parking area. Shuttle bus service was provided form Polaroid directly to Alumni Stadium. The parking lot was set-up to accommodate approximately 400 vehicles. Difficulties arose as a result an inundation of vehicles trying to access this site. By contrast, Polaroid had used the same site during the 1992 Season and accommodated about 15-20 vehicles on a typical game day. By 2:30 p.m., one hour before game time, the site was at total capacity and additional cars were parked on grassy areas and in handicapped spaces . Vehicular traffic from Route 128 to the site, a distance of 1-1/2 miles, was at a continuous crawl. Drivers arriving after the lot was full were diverted int he opposite direction to the Polaroid site in the Needham Industrial Park where an additional 100 cars were added. A sufficient number of buses were not readily available to handle the great increase in spectators arriving at both points.

Temple Game

In the three week period between the Miami and Temple games, the College made arrangements to use the Polaroid location at the Needham Industrial Park off Second Avenue in Needham and about 1/2 mile from Highland Avenue. This was done in response to the problems that had arisen along Needham Street during the Miami game. Once again, this new site was intended for game day parkers who were not previously assigned to a number of other satellite locations. Laidlaw Bus Company provided transportation to the stadium via Highland Avenue to Route 128, Route 9 and Chestnut Hill Avenue in that sequence.

Well planned signage and game day personnel alerted drivers to the new location from Highland Avenue. Disruptions to main traffic flow on Needham Street both before and after the game appeared to be minimal. According to the Colleges' count close to 500 vehicles were parked at this location for the Temple game. If the college can receive permission to expand its use of satellite parking in the Industrial Park, fewer cars will access cars will access the area immediately around the Stadium and the City of Newton will benefit. It is our understanding that the College will use this site in subsequent 1993 games with the possible exception of the 4:00 p.m. contest with West Virginia on the Friday following Thanksgiving day.

2. Law School Campus - Centre Street

Miami Game

The extensive pre-game publicity and assignment of some season ticket holders to the law school campus worked very effectively. Buses began rolling from the Campus to the Stadium at around 11:00 a.m. and continued until close to game time. By the College's count, 985 vehicles were parked at the law school at game time. Of these, about 200+ were pre-parked as a result of the main campus being emptied of cars from the Friday night before the game. From our observations, it appeared that at lest another 200-300 vehicles could have been accommodated at various points around the campus. Both the Colby Road and main entrances were used to access the parking areas. The BC game day and police staff efficiently moved vehicles into the entrances without delays or backups occurring on Centre Street. Bus Service from the Law School Campus departed about every two minutes during the peak time of service. Since spectators started arriving about 4 hours before the start of the game, traffic volumes were spread out over a longer period of time and this resulted in a smooth traffic flow.

Temple Game

Once again the Law School Campus was well used by those holding pre-assigned parking permits. A total of 955 cars were parked on the campus at 2:00 p.m. on game day. Of this total, Boston College reports that 730 vehicles were permitted as part of the football game parking plan. The other 225 cars are likely related to students from the Chestnut Hill campus who are required to move their vehicles off campus the day prior to the game. Some other parking originates from students, faculty and support personnel ordinarily present at the Law School Campus on a Saturday.

In terms of traffic, Centre Street moved easily at most points throughout the day. A slight problem occurred with on-street construction being done by the MWRA near Commonwealth Avenue on Centre Street. While this occurred traffic was reduced to one lane at this point. The Newton Police were effective in helping motorists around this choke point and as traffic subsided delays and backups were nearly eliminated. The Planning Department will check with the MWRA and the DPW to let them know of the BC Football Schedule so that construction hopefully won't occur on game days on streets critical to moving people to and from the stadium.

The two main entrances off Centre Street to the Law School Campus were both used. Game day personnel and the Newton Police moved traffic off Centre Street and into the parking areas without backups. The Mill Street entrance and the Sacred Heart School were not used on this day. It is estimated that some of the parking areas were not filled to capacity and more space exists at the Law School Campus.

D. Use of MBTA Service

1. Riverside MBTA Station

Miami Game

The Riverside parking lot which has a capacity of about 1,000 cars was at about 85% of capacity at the start of the game. It is important to note that the Boston Red Sox were also playing that afternoon and perhaps a large percentage of vehicles in the lot at the time were associated with the contest at Fenway Park. A comparison with a non-BC game day and non-Red Sox game day Saturday needs to be made before any conclusion can be drawn about total usage of this lot by BC football spectators.

Temple Game

As with the Miami game, parking at Riverside on September 25 conflicted with a Red Sox game that afternoon. By 12:00 the Riverside lot was at 90% of capacity. Between 10:30 and 11:30 over 300 cars entered the lot. It is impossible to draw any conclusions about MBTA usage from this site until counts are made on a typical non-game day Saturday as compared to a game day.

2. Woodland MBTA Station Lot

Miami Game

The Woodland lot has a capacity of about 425 cars of which 300 or 70% were occupied by game time. Again, a comparison to a non-BC football game day and non-Red Sox game day needs to be made to get an accurate picture of usage by BC football patrons.

Temple Game

Usage of this lot was considerable by both BC and Red Sox fans 75% of the lot was occupied by 12:00. Further comparisons need to be made. As with the Miami game, parking at Riverside on September 25 conflicted with a Red Sox game that afternoon. By 12:00 the Riverside lot was at 90% of capacity. Between 10:30 and 11:30 over 300 cars entered the lot. It is impossible to draw any conclusions about MBTA usage from this site until counts are made on a typical non-game day Saturday as compared to a game day.

3. Boston College MBTA Green Line Station

Miami Game

The MBTA reports that 10,000 people were observed exiting to trains at this location prior to game time. An additional 3,000 people exited at the Chestnut Hill, Reservoir and Beacon Street stops along the Green line. It is very difficult to determine exactly how many of these people actually held tickets to the BC-Miami game. However, the large scale informational blitz to ticket holders seems to have resulted in increased MBTA usage over previous years.

Temple Game

For the Temple game, total ridership to the game from all Green Line Stations at 12,000, a slight decrease from the Miami game. This figure was provided by the MBTA but again it is unclear how many of these people held tickets to the game or were affiliated in some way. Nonetheless, the Colleges' information program seems to be working and no one will dispute that MBTA ridership is up from the previous season.

E. Traffic Flow - Commonwealth Avenue, Beacon Street and Centre Street

The use of reversible lanes (2 eastbound lanes before the game and 2 westbound lanes after the game facilitated traffic flow on Commonwealth Avenue and Beacon Street. The key to this strategy was the ability of the police to remove illegally parked cars at 12:00 noon on game day. There were no visible backups at any time prior to the game as the Police did an excellent job of keeping traffic moving.

Hours for the parking ban were extended from 8:00 a.m. to 5:00 p.m. along sections of Commonwealth Avenue, Beacon Street and the Carriage Road for the Temple Game. This was done in areas close to the college to enable police to move cars and establish the reversible lanes. Temporary paper signage over the existing signs warned motorists of the tow zone compliance was generally good with only a handful of cars towed away.

Centre Street between the Mass Turnpike and Commonwealth experienced reasonable levels of traffic throughout the day, perhaps more typical of a typical morning commute.

From observation, the intersection of Commonwealth Avenue and Centre Street backed up for a short while around 2:00 p.m., perhaps to a level of service B or C. The overall traffic volumes along Centre Street were perhaps higher than on an average Saturday but this must be verified by traffic counts on both game day and non-game day Saturdays.

F. Data Collection

Citizen volunteers collected data at key points in the study area for both games. Here is what was collected in Newton:

1. Traffic Volumes
    - a. Intersection of Commonwealth and Centre Street.
    - b. Centre Street in front of Law School Campus and at Colby Road.
    - c. Commonwealth Avenue at College Road/Mayflower Road.
    - d. Commonwealth Avenue at Manet Road.
2. MBTA Lots/Parking Counts at:
    - a. Riverside lot.
    - b. Woodland lot.
    - c. Law School Campus.
3. Per person vehicle counts at Law School Campus.

A summary sheet containing the critical traffic and parking data collected on game day is included as Appendix I and II. Subsequent reports will include this information and a comparison with earlier games. The next scheduled home game with Army is set for Saturday, October 30, at 1:30 p.m.

cc: Fire Chief Joseph Daniele
Police Chief Frank Gorgone
Roy LaMotte, City Traffic Engineer
Howard Levine, Attorney for Boston College
Boston College Neighborhood Council

APPENDIX I
BOSTON COLLEGE - MIAMI

September 4, 1993 - - 3:30 P.M.

DATA COLLECTION SURVEY

Parking Ban Information

City of	# of Towns	# of Tickets
Newton	26	35
Boston	22	532
Brookline (Town)	0	18

Parking Lot Information

Capacities as of Game Time

Polaroid Satellite Parking (153 Needham Street)	-420
Polaroid Satellite Parking (Needham Industrial Park)	- 80
Honeywell Bull - Brighton	400
Law School Campus Centre Street	985
St. Johns Seminary	625
Shea Field	1070
MWRA Field - Chestnut Hill	
Pumping Station	160
More Hall (BC Campus)	160

Total # of people bussed by Laidlaw from all Satellite locations: 7900

MBTA USAGE

Riverside Lot - 850 Cars (85% of capacity).

Woodland Lot - 300 Cars (70% if capacity).

At Boston College MBTA (Green Line Stop) - 10,000 departed trains prior to game.

Total Estimated MBTA usage - MBTA Data Collection)

APPENDIX II
BOSTON COLLEGE - TEMPLE

September 25, 1993 - - 3:30 P.M.

DATA COLLECTION SURVEY

Parking Ban Information

City of	# of Towns	# of Tickets
Newton	16	48
Boston	25	599
Brookline (Town)	0	8

Parking Lot Information

- Capacities as of Game Time

Polaroid Satellite Parking (Needham Industrial Park)	508
Honeywell Bull - Brighton	350
Law School Campus Centre Street	730
St. Johns Seminary	519
Shea Field	1050
MWRA Field - Chestnut Hill	40
More Hall (BC Campus)	60
More Hall (BC Campus)	160

MBTA USAGE

Riverside Lot - 900 Cars (90% of capacity).

Woodland Lot - 320 Cars (75% if capacity).

Total Estimated MBTA usage - 12,000 people (source: MBTA Date Collection)

APPENDIX A

3.0 ENVIRONMENTAL PROTECTION COMPONENT

3.1 AIR QUALITY

As part of the Transportation Study, Rizzo Associates, Inc. evaluated whether the project would generate traffic volumes at threshold levels warranting air quality analysis for the six game days. For the 1992 football season, prior to implementation of the Transportation Management Plan, 6,665 spectator automobiles entered and exited the street system in the neighborhoods surrounding Alumni Stadium. The first two football games of the 1993 season, with mitigation in place, resulted in 4,110 spectator automobiles, a reduction of 38.3 percent. Field observations of vehicle delay and level of service performance were conducted at signalized intersections in the study area both before and after the games. These surveys indicated that at all locations vehicles on each approach were able to travel through the intersection in one signal cycle with minimal or no delay or queuing. Intersection level of service in all cases was found to operate at "C" or better.

The Stadium expansion will generate 5,055 automobile trips to the Stadium. This represents an increase of 23 percent over the 1993 season but is still 24 percent below spectator automobile traffic in the 1992 season. The addition of 945 spectator vehicles will be distributed conservatively over an arrival period of approximately two hours and a departure period of one hour. Further, it will be dispersed in two directions along Commonwealth Avenue and two directions on Beacon Street. Accordingly, the project will not contribute to a reduction in level of service below 1992 conditions.

3.2 WIND

A qualitative analysis of the effects of the proposed Alumni Stadium Addition Project will be performed following the refinement of the proposed Stadium design.

3.3 LIGHTING

The existing Stadium playfield lighting will be modified to include lower-level lighting for practice sessions on weekdays. On occasion, this will preclude the need to use upper level lighting. New site lighting will be consistent with the existing campus systems.

3.4 NOISE

The Alumni Stadium sound system will be modified. The proposed modifications to the sound system consist of installing a new distributed-speaker system. This new system will provide a better distribution of sound than currently exists, allowing the volume of sound emanating from each speaker to be reduced. The reduced speaker volume will permit better containment of speaker-generated noise within the Stadium.

The proposed Stadium Addition is expected to have a mitigating effect on noise impact to the residential area. This advantage derives from the double tier design of the Stadium, the upper tier of which forms a wall that blocks sound propagation to the south.

Three new mechanical systems will be installed during the Alumni Stadium Addition Project: (1) an exhaust fan system to provide ventilation for the rest rooms, (2) a small modular boiler to heat the rest rooms, and (3) a smoke evacuation system to ventilate the area beneath the stands in the event of a fire. These mechanical systems will not cause noise impacts beyond the immediate vicinity of the units.

3.5 SHADOWS

The figures on the following pages (Figures 3-1 through 3-12) describe the shadows that will be cast by the proposed addition to Alumni Stadium on adjacent buildings and spaces. The views depict shadow conditions at 9:00 a.m., 12:00 noon, and 3:00 p.m. for the vernal equinox, summer solstice, autumnal equinox, and winter solstice. As these figures indicate, shadows cast by the project fall entirely within the confines of the campus and in no way affect adjacent properties.

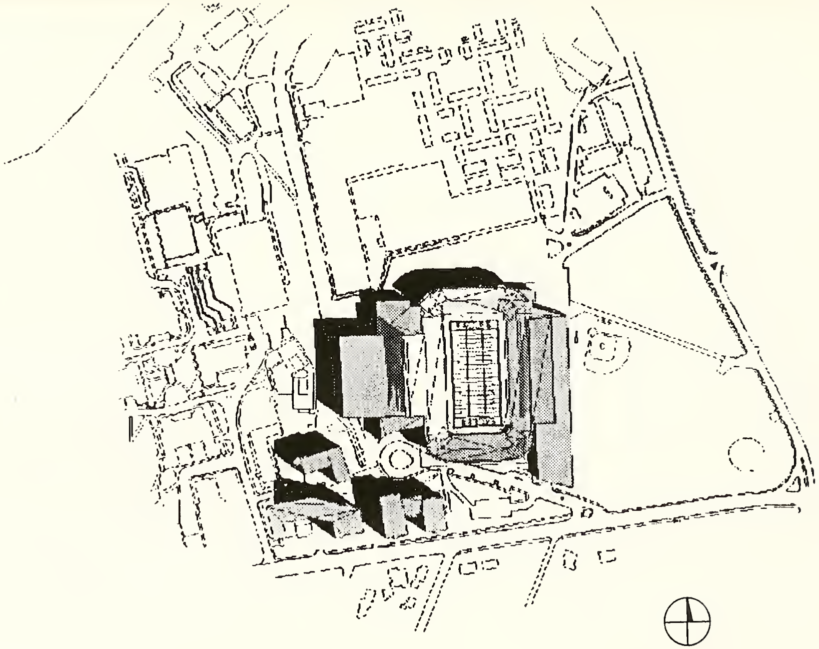
3.6 SOLID WASTE

Currently Boston College waste is collected daily by a contracted waste removal company. The athletic department generates 3 percent of the total waste on the campus. To determine the waste that will be generated by the 12,000-seat increase in Alumni Stadium, an evaluation of the existing Stadium was performed. On a game day, the Stadium and all football-related activities on campus generated approximately 150 cubic yards of waste. Dividing the daily quantity of waste by the total number of seats indicates that approximately 0.0046 cubic yards of waste are generated by each seat. Therefore, multiplying this rate by the increase in seats in the Stadium (12,000) demonstrates that the new seats will generate approximately 55 cubic yards of waste each game day. It is estimated that activities related to football games, held six times a year, will generate a total of approximately 205 cubic yards of waste per game day.

Boston College is dedicated to removing trash accumulated before and after home football games in nearby neighborhoods, park-and-charter lots, and on-campus immediately following the game. Boston College hires 88 workers, providing over 700 manhours, to remove the trash. The workers begin from the farthest point in the neighborhoods, working their way toward Alumni Stadium. The following illustrates the schedule of these "cleanup crews."

1. A cleanup crew patrols the surrounding neighborhoods on Friday nights before football games.

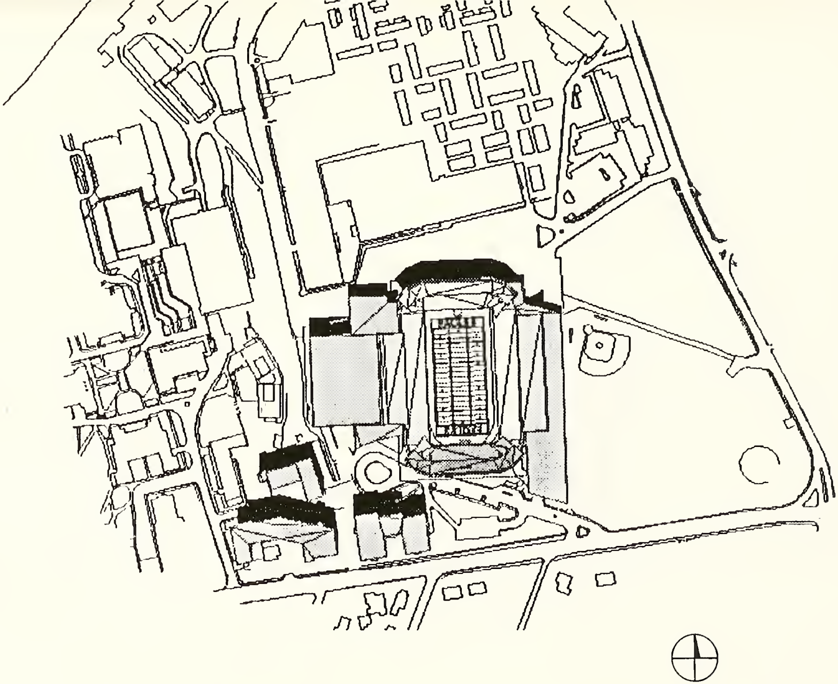
2. Tailgaters are given, free of charge, at least one trash bag. Over 6,000 trash bags are distributed to spectators before every game.



Shadow Study March 20 9:00 AM **Figure 3-1**

Boston College Proposed Stadium

ARC ARCHITECTURAL RESOURCES CAMBRIDGE, INC.
140 MOUNT AUBURN STREET
CAMBRIDGE MASSACHUSETTS 02138



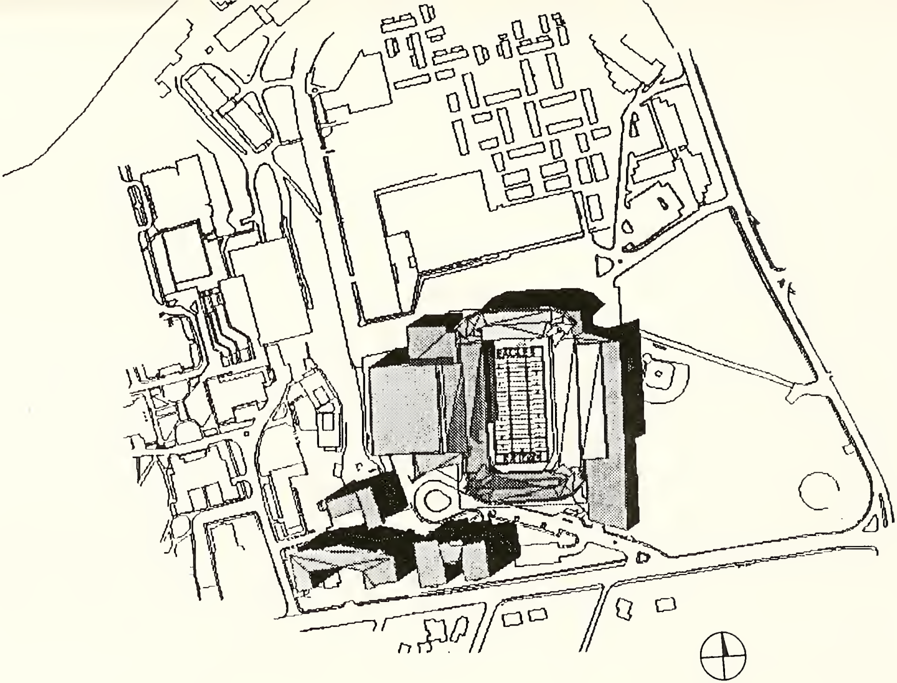
Shadow Study March 20 Noon

Figure 3-2

Boston College

Proposed Stadium

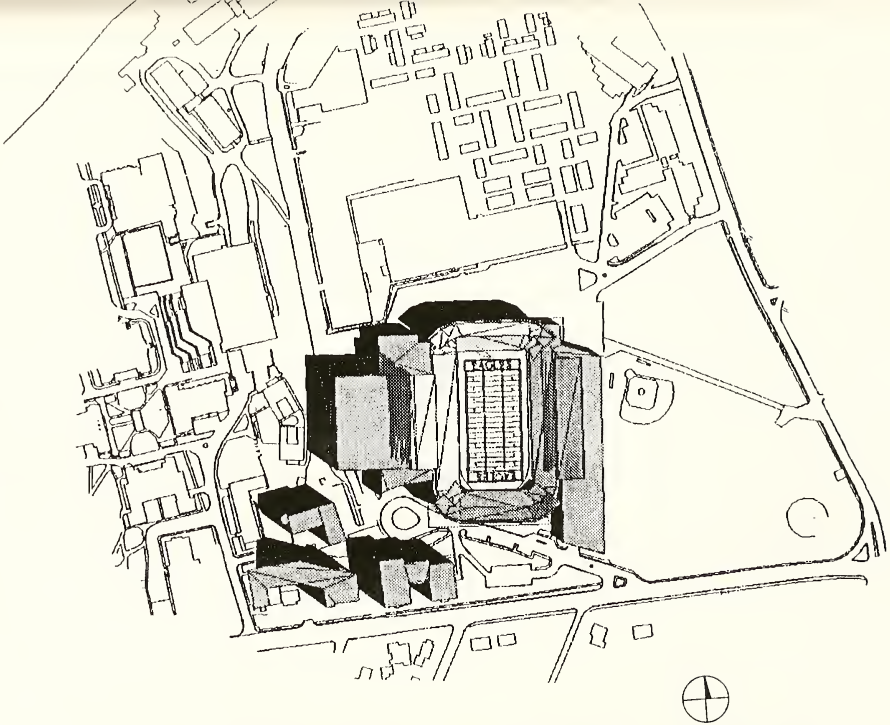
ARC ARCHITECTURAL RESOURCES CAMBRIDGE, INC.
140 MOUNT AUBURN STREET
CAMBRIDGE MASSACHUSETTS 02138



Shadow Study March 20 3:00 PM **Figure 3-3**

Boston College Proposed Stadium

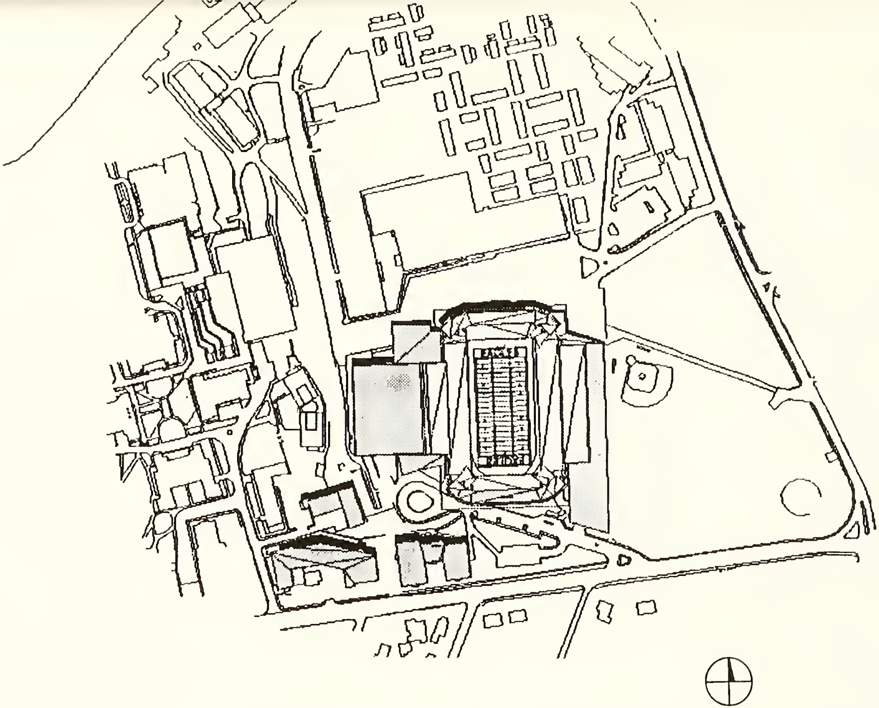
ARC ARCHITECTURAL RESOURCES CAMBRIDGE, INC.
140 MOUNT AUBURN STREET
CAMBRIDGE MASSACHUSETTS 02138



Shadow Study June 21 9:00 AM **Figure 3-4**

Boston College Proposed Stadium

ARC
ARCHITECTURAL RESOURCES CAMBRIDGE, INC.
140 MOUNT AUBURN STREET
CAMBRIDGE MASSACHUSETTS 02138



Shadow Study June 21 Noon

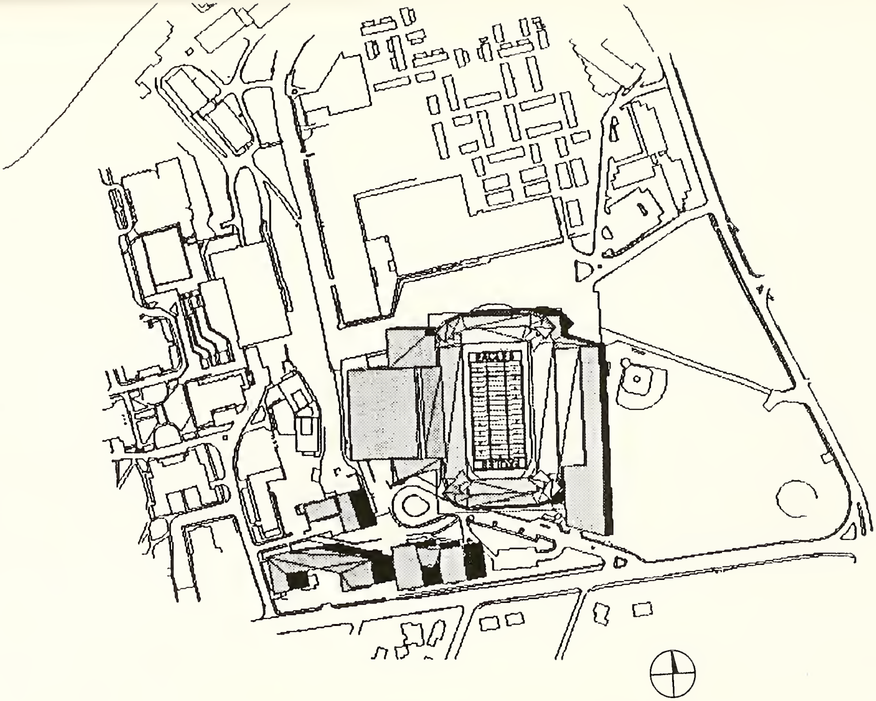
Figure 3-5

Boston College

Proposed Stadium

ARC

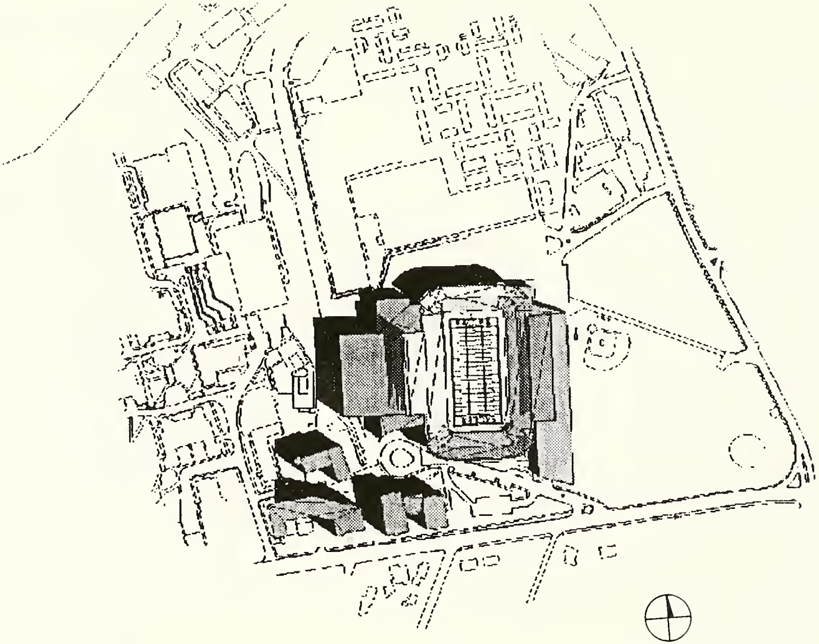
ARCHITECTURAL RESOURCES CAMBRIDGE, INC.
140 MOUNT AUBURN STREET
CAMBRIDGE MASSACHUSETTS 02138



Shadow Study June 21 3:00 PM **Figure 3-6**

Boston College Proposed Stadium

ARC ARCHITECTURAL RESOURCES CAMBRIDGE, INC.
140 MOUNT AUBURN STREET
CAMBRIDGE MASSACHUSETTS 02138



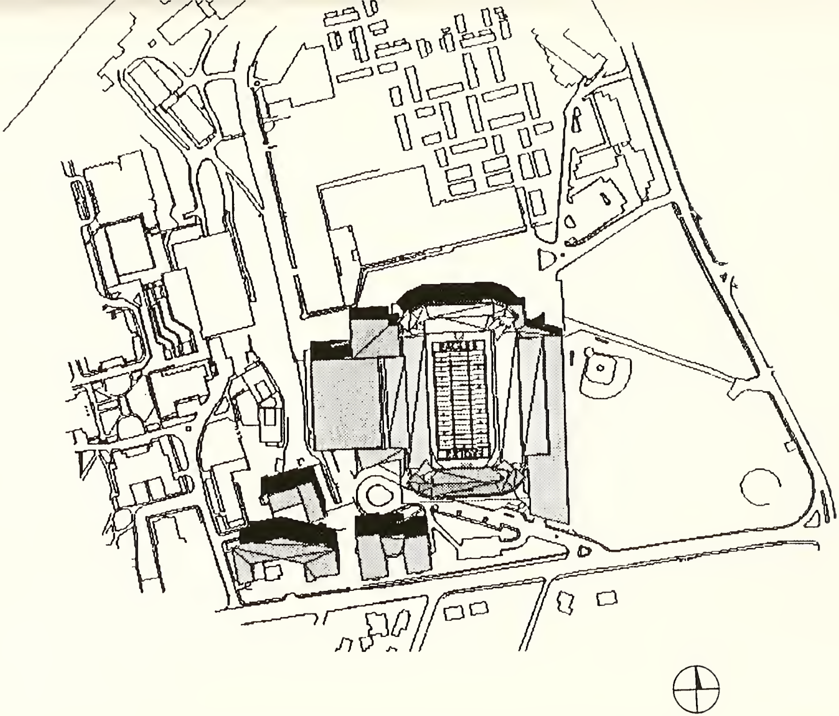
Shadow Study September 20 9:00 AM

Figure 3-7

Boston College

Proposed Stadium

ARC
ARCHITECTURAL RESOURCES CAMBRIDGE, INC.
140 MOUNT AUBURN STREET
CAMBRIDGE MASSACHUSETTS 02138



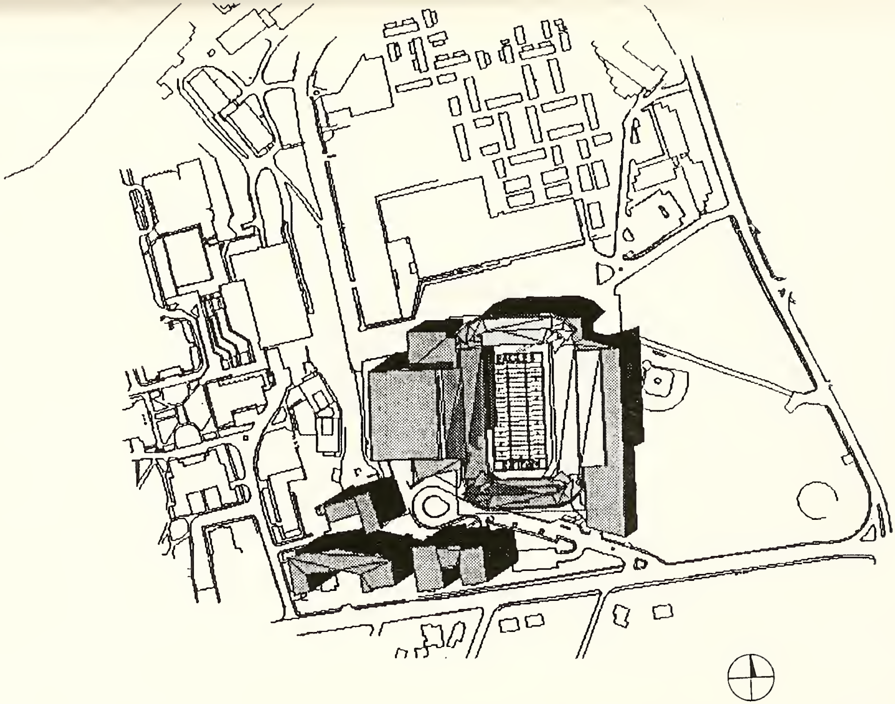
Shadow Study September 20 Noon

Figure 3-8

Boston College

Proposed Stadium

ARC ARCHITECTURAL RESOURCES CAMBRIDGE, INC.
140 MOUNT AUBURN STREET
CAMBRIDGE MASSACHUSETTS 02138



Shadow Study September 20 3:00 PM

Figure 3-9

Boston College

Proposed Stadium

ARC

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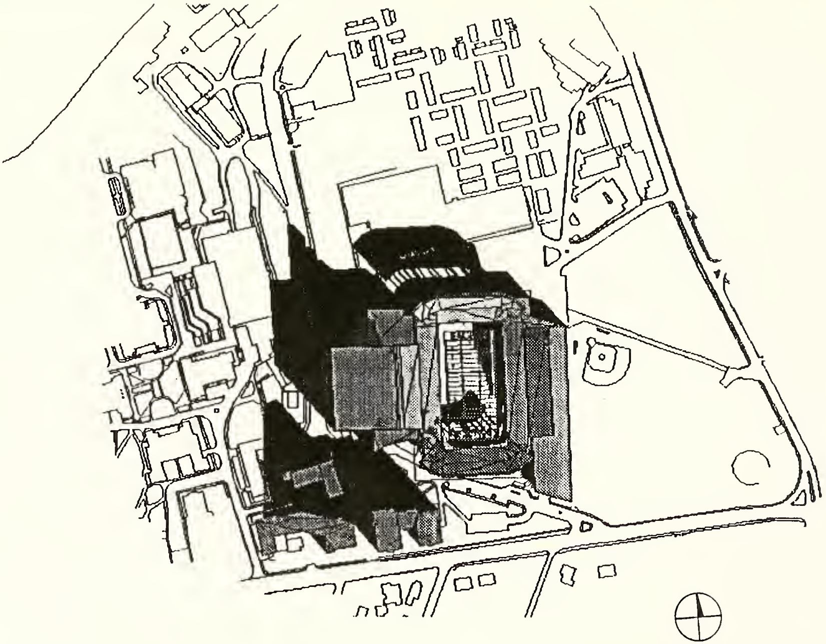

Shadow Study December 21 9:00 AM

Figure 3-10

Boston College

Proposed Stadium

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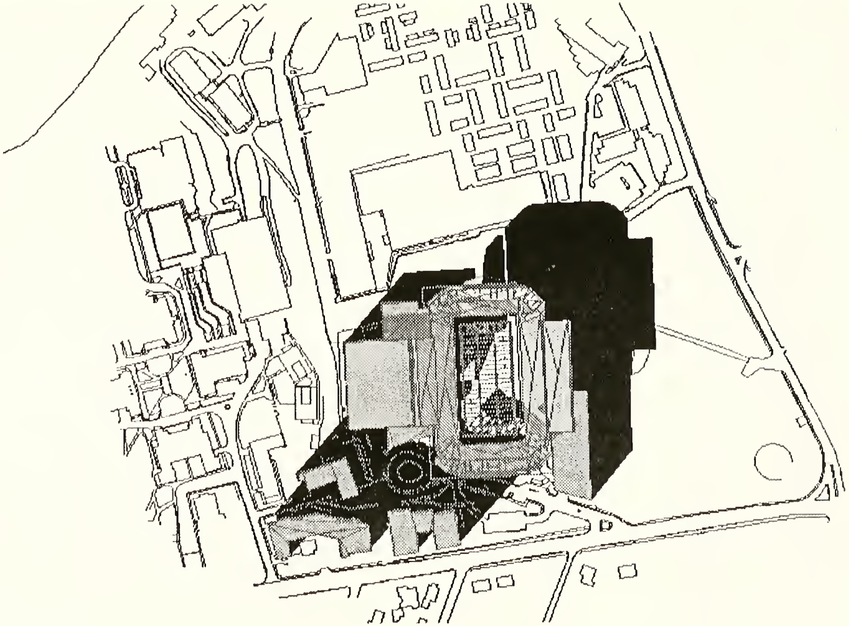

Shadow Study December 21 3:00 PM **Figure 3-12**

Boston College Proposed Stadium

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3. Thirty people work an eight-hour shift beginning at midnight after every game. This crew's sole purpose is to remove trash in the neighborhoods surrounding Alumni Stadium.

4. If at any point between the ending of the game and Monday morning, Boston College receives a complaint concerning trash in the community, another cleanup crew will immediately be dispatched to address the matter.

5. Boston College is committed to ensuring that any trash in all park-and-charter lots is removed. With this in mind, cleanup crews are dispatched to each lot at the end of every game. There is no tailgating at the satellite lot locations; therefore, cleanup has been minimal.

6. Ten people clean Conte Forum.

7. The day after the football game, 38 people work an eight-hour shift to remove trash around the Stadium and on-campus. Ten additional people work an eight-hour shift to clean Alumni Stadium. In addition to the cleanup crews, there are two "Sweepers" (automobiles) that drive over parking lots to clean up debris that the workers were unable to collect. Boston College is investigating the possibility of instituting a recycling program for recyclable waste materials (e.g., plastic bottles, aluminum cans, cardboard, etc.) generated during game days.

3.7 GEOTECHNICAL

The existing soil and groundwater conditions are defined by soil borings performed previously for the existing parking garage to the east of the Stadium and the Conte Forum located to the west of the Stadium. The Alumni Stadium site was formerly occupied by an MDC reservoir. The reservoir was abandoned and filled, creating the majority of the real estate that is presently the Boston College Lower Campus. The south end of Alumni Stadium is approximately coincident with the southern extent of the former reservoir; however, the remainder of the Stadium lies entirely within the footprint of the former reservoir.

As a result of the filling of the former reservoir, the site of the Stadium is currently underlain by a granular fill of varying thickness. The thickness of the fill deposit generally increases from south to north and from the east and west sidelines to the center of the existing Stadium area, where it is believed to be about 30 feet in thickness. The fill generally consists of a loose to compact sand and gravel containing occasional cobbles and boulders, some silt, and miscellaneous construction debris. The fill deposit is underlain by a discontinuous organic deposit which, where present, is generally not more than a foot or two in thickness and represents the bottom of the former reservoir. The fill and/or organic deposits are underlain by a 5- to 20-foot-thick deposit of compact to dense fine sand overlying a deposit of dense glacial till that is plastered directly on the underlying bedrock surface. The depth to the bedrock surface is anticipated to be less than 15 feet at the south end of the Stadium and to

vary up to as much as 50 feet at the center of the north end of the Stadium. The bedrock consists of hard, freshly weathered, moderately-fractured to sound Roxbury Conglomerate.

Groundwater is generally present at about Elevation +130, or about 8 feet below the existing ground surface.

With the exception of the utilities servicing the existing Stadium, the only utilities known to be present under the site of the proposed Stadium expansion is an approximately 30-inch-diameter storm drain line crossing the southern boundary of the site and a 12-foot-diameter MDC water supply aqueduct that passes through the bedrock at a depth of more than 240 feet in an east-west orientation to the north of the Stadium.

Based upon the above subsurface conditions and the scope of the proposed construction, it is anticipated that the new construction located at the south end of the existing Stadium and the lower level stands will be supported on spread footing foundations. The upper-level stands in the south end zone will most likely be supported on the natural sand and glacial till deposits that are anticipated to be present at a shallow depth below the existing ground surface. The upper level stands in the north end zone and the proposed sports complex will be pile supported. The new lower-level stands are anticipated to be supported on spread footings bearing on the existing fill deposit similar to the current lower-level stands.

Since there is no below-grade space being constructed, the requirement for excavation is limited to that which is necessary to install the spread footings, pile caps, and grade beams. Hence, displacements of the existing adjacent structures and/or utilities as a result of excavation are not anticipated to be an issue. Pile driving will not have an impact on the existing water supply tunnel due to its great depth of embedment into the bedrock underlying the site. The water tunnel is located more than 240 feet below the surface. It was not adversely impacted by pile driving operations performed previously during construction of the existing parking facility, the Conte Forum, the Flynn Recreational Complex, or during rock blasting operations as were performed during construction of the O'Neil Library and the adjacent Parking Garage. Boston College works regularly with the Massachusetts Water Resources Authority (MWRA) to protect MWRA utilities.

3.8 CONSTRUCTION IMPACTS

Boston College has selected Richard White and Sons, Inc. to construct the Alumni Stadium Addition Project. Richard White has prepared a program to address construction mitigation for Boston College. This section summarizes the major features of the mitigation plan and offers additional information regarding construction phasing, traffic and parking impacts, and construction staging.

The construction area is limited to property owned by Boston College. No construction will take place on Beacon Street with the exception of minor utility work. All construction-related storage areas will be included within this area.

3.8.1 Construction Phasing

Construction of the Alumni Stadium Addition Project is anticipated to begin in early 1994 and to end by September 1994.

3.8.2 Construction-Related Traffic

Construction-related traffic generally includes two components: traffic generated by construction workers and traffic generated by vehicles hauling material in or out of the project site.

3.8.3 Construction Workers

The number of workers required will vary over the construction period. However, an average of 50 workers will be on-site.

Based on past experience with Boston College building projects, it is estimated that 60 percent of construction workers will drive to work and 40 percent will use the "T". Currently, it is Richard White and Sons's plan to schedule an 7:30 a.m. to 4:00 p.m. work day. The peak commuting hours along Commonwealth Avenue and Beacon Street occur between 8:00 a.m. and 9:00 a.m. and between 5:00 p.m. and 6:00 p.m. Therefore, traffic generated by construction personnel will occur prior to the peak commuting hours. It is anticipated that the construction workers will generate approximately 120 daily trips.

3.8.4 Site Vehicles

It is estimated that construction-related vehicles will generate approximately 30 daily trips. Deliveries will be minimized during the peak hours of traffic on Commonwealth Avenue. The trips will be evenly distributed throughout the work day. Truck access to the site will be limited to the gate located on Lower Campus Road, adjacent to Saint Ignatius Church, and Alumni Stadium Driveway on Beacon Street. Trucks will follow a specified route agreed upon with the Boston Transportation Department.

The total increase in vehicle trips to the site due to construction-related activities is anticipated at approximately 150 daily trips, with less than 10 trips occurring during the peak commuting hours. No significant impact to traffic conditions within the Chestnut Hill area will result from the construction of this project.

3.8.5 Parking on Lower Campus During Construction

As part of the construction mitigation program, the College is proposing that all construction workers park on Lower Campus. It is estimated that the construction workers will require 30 parking spaces.

3.8.6 Construction Staging

Construction staging will primarily occur within the footprint of the expanded stadium. The ground area obtained after demolishing the pedestrian access ramp, located between the Stadium and garage, will also be used as a staging area.

Staging for pile driving and final erection of the Stadium will require a portion of the parking lot between the Flynn Recreation Center and the Stadium. This will primarily occur during the summer months when school is not in session.

3.8.7 Construction Mitigation (Noise, Traffic, Air, and Pedestrian)

Construction mitigation procedures are summarized in Table 3-1. Particular sensitivity will be given to minimizing impacts to residents on Beacon Street. Construction will be limited to weekdays to the extent possible.

3.9 RODENT CONTROL

The responsibility for implementation of rodent control is assigned to the Boston College Housekeeping Department. They are responsible for the existing "Integrated Pest Management Program" at Boston College and employ a licensed in-house technician for internal control and monitoring.

The interior of facilities are routinely inspected for raccoons, skunks, and other rodents and, if found, are treated in accordance with the Massachusetts State Laws, Health Codes, and any applicable local ordinances.

Areas of new construction are surveyed for pest and rodent activity. A report is submitted and upon its subsequent review, a determination for action (or no action) is made. Should a potential problem be noted, a course of action is selected as follows:

a. *Minor Activity and/or Small Site.* The work is assigned to the in-house technician for abatement and monitoring throughout the project duration.

b. *Significant Activity and/or Large Site.* The work is scoped by in-house personnel and priced by licensed corporations. The work is then accomplished through contract services and is overseen by in-house personnel.

Typical pretreatment steps during construction are as follows:

a. Emphasize that workers are to be "proactive" in regard to proper disposal procedures for all rubbish, trash, and food products (lunch) in order to avoid attracting pest or rodents to the construction site.

TABLE 3-1

CONSTRUCTION MITIGATION MEASURES

Noise	Work will generally occur between 7:30 a.m. and 4:00 p.m. Overtime needs will first be met by extending the work day to 5:00 p.m. All overtime will be scheduled first with Boston College. Trucks will not be permitted to idle longer than 15 minutes. Pile driving will occur only between 8:00 a.m. and 4:00 p.m.
Traffic	Construction workers will regularly be encouraged to use public transportation to and from the site. Truck activity will be minimized during peak traffic hours (7:30 a.m. to 9:00 a.m. and 4:00 p.m. to 5:00 p.m.). Truck access will be via the St. Ignatius gate and Alumni Stadium Drive. In the immediate area, deliveries will be restricted to Beacon Street and Commonwealth Avenue. Trucks will not be permitted on local residential streets. No double parking or traffic obstruction by construction vehicles will be permitted. Prior to construction of the project, a Construction Traffic and Staging Plan will be prepared. The plan will be a contractual obligation for all subcontractors and suppliers working on the project.
Dust	Dust-generating debris will be wetted. Storage of debris on-site will be minimized. Trucks hauling debris from the site will be covered. Dust-covered streets and sidewalks will be periodically cleaned.
Pedestrian Protection	A chain link fence will be placed around the perimeter of the project area. Walkways will be provided for pedestrians. Appropriate signage will be provided for pedestrian routing around the work area. Campus police will make security checks at least twice a night to ensure the site is secure.
Communications	A designated representative for Boston College will respond to any concerns regarding construction issues.

b. Empty construction dumpsters on a regular and frequent basis.

c. Pretreat soil under slab-on-grade construction, as required.

d. Pretreat wall/partition cavities and mechanical shafts as they are constructed, prior to being closed.

4.0 INFRASTRUCTURE SYSTEMS COMPONENT

4.1 INTRODUCTION

This section evaluates the impacts of the proposed Alumni Stadium Addition Project on the existing infrastructure system at Boston College. These systems include water, wastewater, storm drainage, natural gas, and electric power systems. The existing water, wastewater, and storm drainage utilities in the vicinity of the Stadium are depicted on Figure 4-1. The proposed layout of these utilities and connections to the existing systems are shown on Figure 4-2. The proposed expansion of Alumni Stadium will increase the seating capacity from 32,500 seats to 44,500.

4.2 WATER SUPPLY

4.2.1 Existing Conditions

The MWRA is responsible for providing surplus water to the city of Newton, which then provides water service to Boston College Alumni Stadium. The stadium currently receives water service from the city of Newton via a 12-inch water main in Beacon Street. The Newton Water Department is responsible for service and maintenance of the water distribution system up to the metering manholes that are located in the sidewalk along Beacon Street.

The existing peak water demand for the Stadium is based on 3.3 gallons per day (gpd) per seat and is estimated to be 107,250 gpd (Table 4-1). These flows represent 110 percent of the peak values presented in Title V for determining peak wastewater flows for a gymnasium.

The entire Boston College campus is included in the Chestnut Hill High Pressure System. No existing water pressure problems have been attributed to the Stadium use. However, there have been reports of reduced pressure along Acacia Street and Chestnut Hill Terrace, which are dead end streets located at the extremities of the water distribution system. These conditions occur during periods of heavy demand and are not unusual at the high end of distribution systems served by small water mains.

The 12-inch water main running from Newton Center to Hammond Street has recently been cleaned and relined. Disturbance during this work may be responsible for some of the complaints received regarding dirty water. The section from Hammond Street to Boston College has not been relined.

Water pressure tests conducted at the existing Stadium facility indicate that there are no problems with the existing supply for domestic use or required fire flows under the plumbing and building code criteria. This analysis of the water pressure system is based on the following results of a pressure test conducted on the hydrant adjacent to the southern side of the Stadium on Alumni Stadium Driveway: static pressure = 96 psi; residual pressure = 61 psi at 980 gpm.

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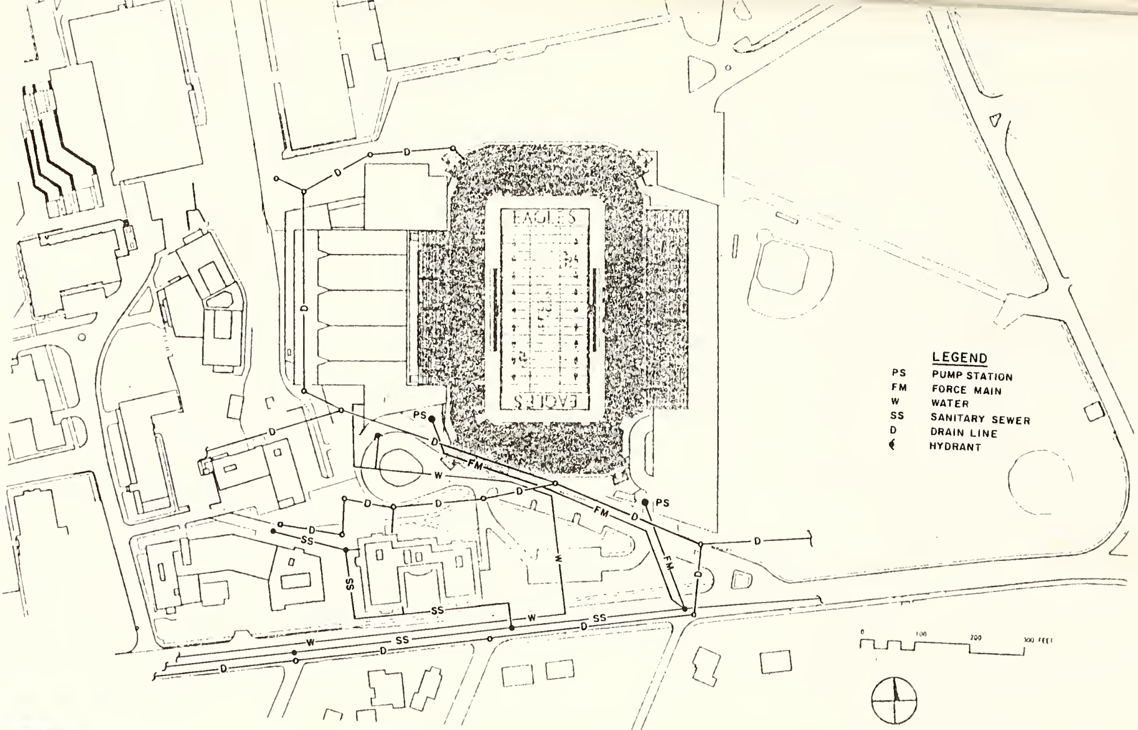


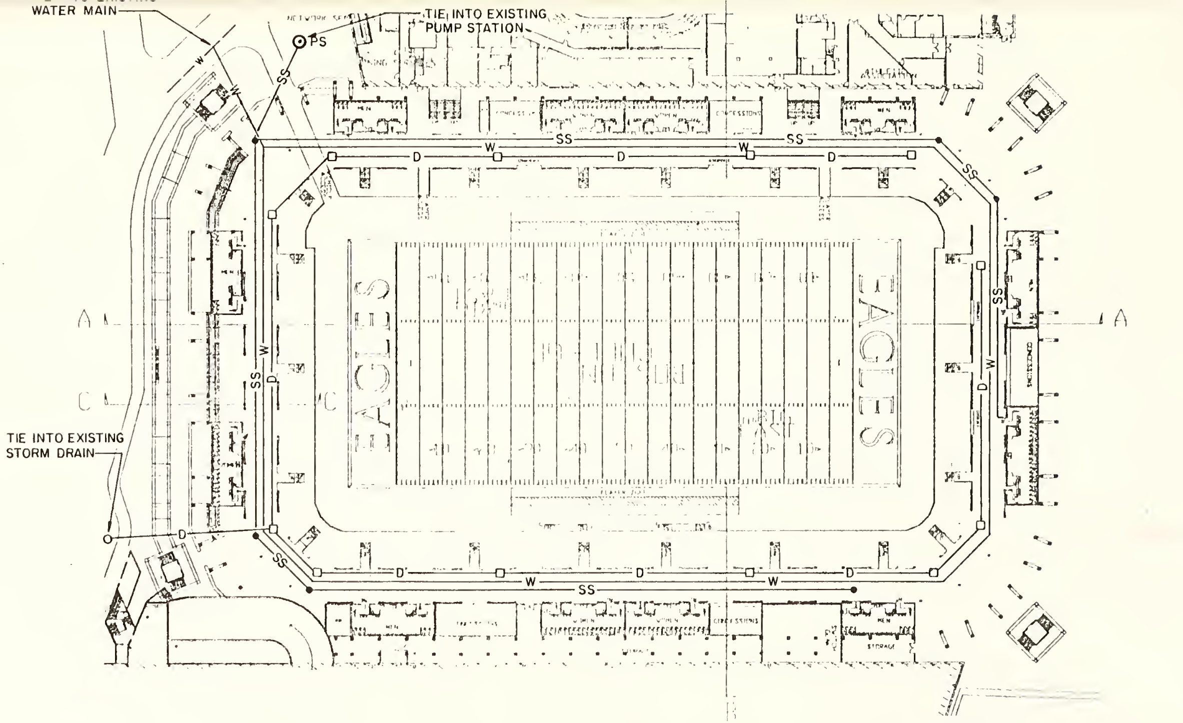
Existing Site Utilities

Figure 4-1

Boston College

Proposed Stadium

Charles C. Samiotes, P.E. Inc.
Sixty-five East Plain Street · Wayland, Massachusetts
Real Estate Development / Civil Engineering / Environmental Services



Proposed Site Utilities

Figure 4-2

Boston College

Proposed Stadium

Charles C. Samiotes, P.E. Inc.
Sixty-five East Plain Street · Wayland, Massachusetts
Real Estate Development / Civil Engineering / Environmental Services

4.2.2 Proposed Conditions

The Stadium plans include the removal of all existing sinks and toilets and replacement with state-of-the-art low-flow fixtures. A decrease in water usage of at least 35 percent can be expected due to installation of these fixtures. The total estimated volume for future peak water demand as shown in Table 4-1 is 110,120 gpd. The additional 2,870 gpd of water for domestic use will be supplied from the existing 12-inch city of Newton water distribution system and represents a minimal increase in water use. The water distribution system for the Stadium has been designed as an 8-inch loop. This loop will tie into the existing 8-inch line at the south end of the Stadium that currently supplies the Stadium. The proposed ductile iron pipe which will serve the Stadium as noted above will also supply the fire hydrants and the Stadium fire suppression system.

4.3 WASTEWATER

4.3.1 Existing Conditions

Wastewater from the Stadium is currently pumped into two 6-inch force mains by two existing pumping stations located adjacent to the Stadium in the southwest and southeast corners, respectively. Both force mains discharge to a 12-inch gravity sewer line that runs easterly along Beacon Street. This 12-inch sewer is maintained by the city of Newton until it enters the city of Brookline just beyond Reservoir Road. This sanitary sewer line eventually joins with the Boston Water and Sewer Commission's (BWSC's) wastewater system and discharges to the Massachusetts Water Resources Authority's (MWRA's) Deer Island wastewater treatment plant.

As shown in Table 4-1, the existing peak wastewater discharge from the site, based on 32,500 seats is approximately 97,500 gpd. The average discharge is estimated to be one half of the peak, or 48,750 gpd.

4.3.2 Proposed Conditions

The proposed expansion of Alumni Stadium will increase the seating capacity from 32,500 seats to 44,500 seats. The expansion includes the addition of 12,000 new seats as well as the replacement of 19,800 seats. These seats will be served by new low-flow fixtures. It is assumed that the remaining 12,700 spectators will continue to utilize existing facilities in Conte Forum and the parking garage. The estimated future peak discharge as shown in Table 4-1 is estimated to be 100,110 gpd. Upon completion of the Stadium Addition Project, the average discharge will be 50,500 gpd. These values represent a minimal increase of 2.7 percent over existing conditions on the five to six game days per year.

TABLE 4-1

WATER AND WASTEWATER FLOW

	Water[1] (gpd)	**Wastewater (gpd)**
Peak Daily Flow/Seat[2]		
Existing Fixtures[2]	3.3	3.0
Low-flow Fixtures[3]	2.1	2.0
Existing Stadium Peak Daily Flow	107,250	97,500
Future Stadium Peak Daily Flow Based on providing new low-flow fixtures to serve 31,800 seats: 12,700 seats will be served by existing fixtures[4]	110,120	100,110
Percent Change	2.7% increase	2.7% increase

[1] Water use calculated to be 110% of estimated wastewater flows.

[2] Based on State of Massachusetts Title V Regulations for gymnasium use (310 CMR Section 15.0) Average daily flows are not presented but according to Title V would be one-half the peak flow value.

[3] Based on a 35% reduction of peak flows due to low-flow water conservation fixtures.

[4] Assumed existing fixtures in Conte Forum and the parking garage will continue to be used.

4.4 STORM DRAINAGE

4.4.1 Existing Conditions

Stormwater runoff from the lower campus area, including the Stadium, discharges to a 36-inch × 40-inch culvert via a 30-inch storm drain located on campus property just south of the Stadium and north of Beacon Street. This pipe, which is owned and maintained by the BWSC, begins just to the south of the Conte Forum, runs easterly along the campus property, and wraps around the southern side of the Chestnut Hill Reservoir where it turns into a 40-inch × 44-inch storm drain. This storm drain travels through Brookline and ultimately discharges to the Muddy River, which flows into the Charles River.

4.4.2 Proposed Conditions

No increase in impervious area will result from the proposed Stadium addition; therefore, no increase in stormwater discharges from the site can be expected. The existing connection to the storm drainage system will be relocated, however, but no impact to the existing storm drainage system is expected.

4.5 NATURAL GAS SYSTEM

4.5.1 Existing Conditions

The Boston Gas Company currently provides natural gas to the Boston College Campus. An existing 12-inch gas main is located on the southern side of Beacon Street. Gas service to the Conte Forum is currently from a 2-inch main that is fed from the Flynn Recreation Complex. This main originates from St. Thomas More Drive.

4.5.2 Proposed Conditions

It is estimated that 18,700 MBTUs per year will be required to provide space heating for the bathrooms. Boston Gas confirms that sufficient capacity exists.

4.6 UTILITY SYSTEMS (Electrical, Telephone, Fire Alarm, CATV)

4.6.1 Existing Conditions

Boston Edison Company is responsible for providing electrical service to Boston College. The electricity is provided to the College via two dedicated 13.8 kilovolt (kV) circuits, each with 7.0 million volt-amperes (mVa) capacity. These services are backed up by an additional 5.5 mVa circuit shared with other customers.

The city of Boston municipal fire alarm circuit is available on campus for connection of fire alarm systems to the fire department supervisory system. Telephone, computer, and cable television systems are presently distributed by Boston College privately.

4.6.2 Proposed Conditions

The only additional electricity needed for the proposed expansion will be to provide lighting in the bathrooms, hallways, and concession areas as well as some space heaters, toilet exhaust fans, and assorted appliances. This additional demand will be intermittent, since most service will be necessary only during scheduled events. It is estimated that the additional demand will be 27,200 kilowatts (kW). The breakdown of the increased electricity demand is as follows:

Lighting 1.4 w/ft.	150 kW
Smoke Exhaust	100 kW
Heating and Toilet Exhaust Fans Concessions	75 kW
	100 kW
TOTAL	425 kW

Assuming a maximum of 6 football games annually at the Stadium (6 hours each day), use was calculated as follows:

425 kW/hr × 6 hrs/day × 6 days = 15,300 kW

A hookup to an existing switchgear adjacent to the parking garage is proposed to extend service to the Stadium expansion. Boston Edison has been contacted concerning the anticipated additional load and has indicated that sufficient capacity exists.

Telephone service will be provided as an extension of the existing service at the Stadium. No computer or cable television services are associated with the project.

A new electrically supervised, addressable Class A fire alarm system will be installed in the Stadium. The system will include audio-visual alarms, double-action manual stations, heat detectors, smoke detectors, duct smoke detectors, and control panel. The system will be connected to an automatic smoke ventilation system.

APPENDIX H

5.0 URBAN DESIGN COMPONENT

Size:	120,000 square feet
Height:	50'-0"
Existing Capacity:	32,500
Proposed Capacity:	44,500
Materials:	Masonry facade, steel frame, aluminum and precast concrete decking, aluminum plank seats
Schedule:	Not yet determined

5.1 DESIGN CONCEPT

Situated between the existing Conte Forum and existing Parking Garage, the new Stadium will occupy roughly the same footprint as the original football Stadium. All of the existing lower bleacher seats and the existing track that encircles the football field will be removed. New bleachers will be constructed that close-in both end zones and sidelines. New upper-tier bleachers will be constructed that will provide additional seats at each end zone. These bleachers will have the same front elevation as the upper tier seats above the Conte Forum and the existing Parking Garage. New stair and elevator towers will be located on all four corners of the Stadium and will provide handicap access to all renovated areas in the Stadium.

5.2 EXTERIOR

The new Stadium will be contained by Conte Forum on the west side and the existing parking garage on the east side, so no portion of the east and west elevations will be visible. The south elevation, which faces Beacon Street, will be constructed with a masonry facade, and an exposed tubular steel truss will support the upper-tier seats. The stair towers will carry the masonry material up to the top level of the upper-tier seats and provide bookend terminations to the seating system. The proportion of solids and voids and the detailing of the masonry veneer and steel truss have been designed to reduce the apparent scale of the Stadium.

5.3 CAMPUS MASTER PLAN IMPLICATIONS

The addition of 12,000 seats to the football Stadium is an important step for Boston College and will enable the football team to stay competitive in their division. The siting of the new Stadium seats will minimize the amount of land that is affected and will not reduce the amount of open, green space on the Beacon Street side of the Stadium.

5.4 PEDESTRIAN CIRCULATION

The majority of pedestrians currently enter the Stadium in the south end from Beacon Street. The new Stadium will have major entries at all four corners and will distribute the pedestrian flow more evenly between the north and south end zones. The Stadium itself will be

accessible to the handicapped. The four elevators will provide handicapped access to both the upper and lower tiers in the Stadium.

5.5 VISUAL DOCUMENTATION

The original Stadium addition plans dated April 1993 prepared by the college's staff were basically a planning study. They did not address new standards for the Americans with Disabilities Act (ADA). Building Code requirements for aisles, stairwells, and ramps plus the ADA requirements increased the footprint beyond the limits for the existing Stadium. In order to reduce the impact of the enlarged plan, a partial second tier has been added at both ends. This second tier preserves open space and on-campus parking, is not as high as the current upper tiers of the existing Stadium, and will be lower than the future building on Beacon Street proposed in the Boston College Master Plan in this location.

To further clarify the design intent of the project, the following pages contain visual documentation of the existing campus and neighborhood and of the proposed design concept.

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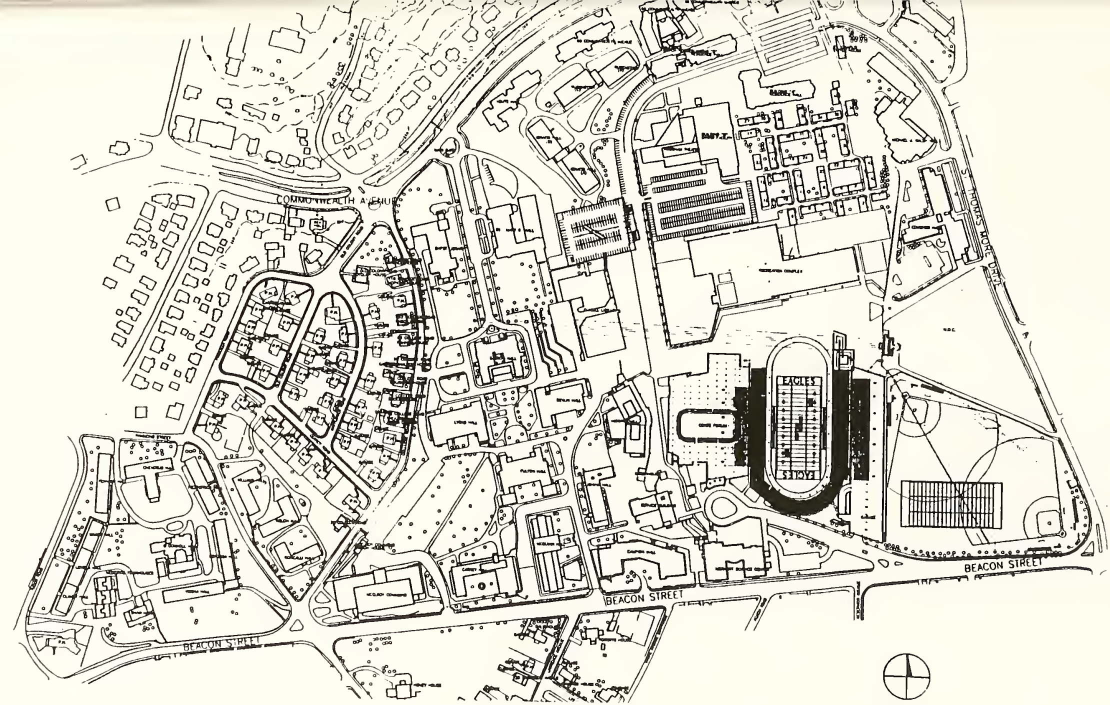

Existing Site Plan

Figure 5-1

Boston College

Proposed Stadium

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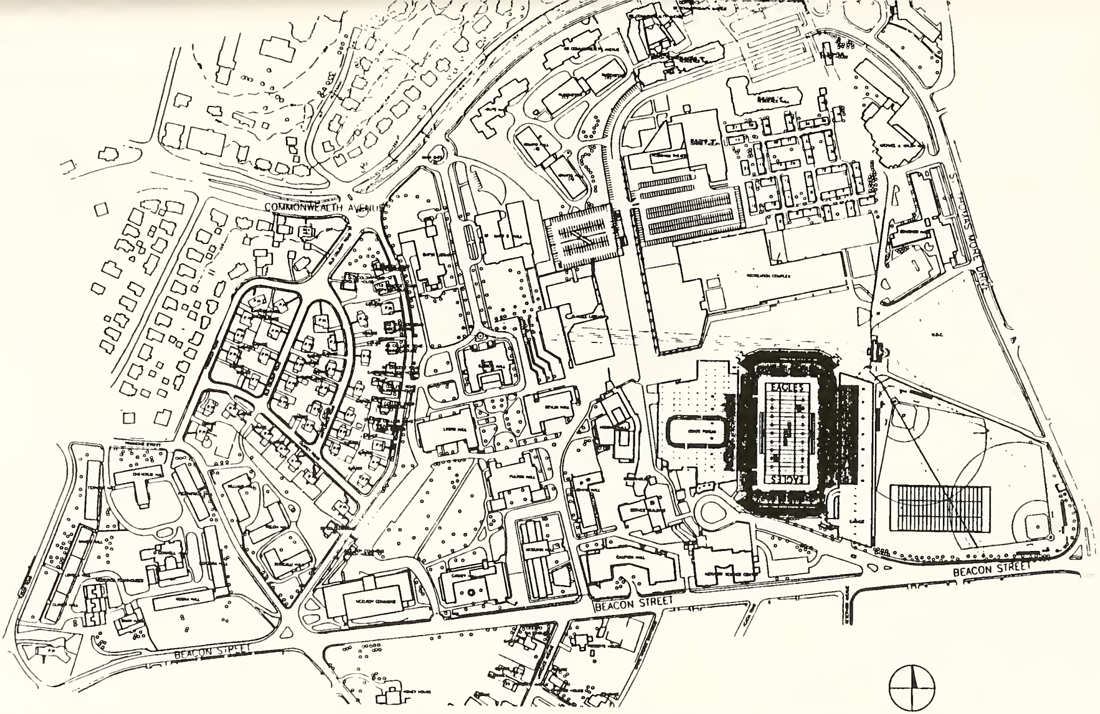

Site Plan October 1993

Figure 5-2

Boston College

Proposed Stadium

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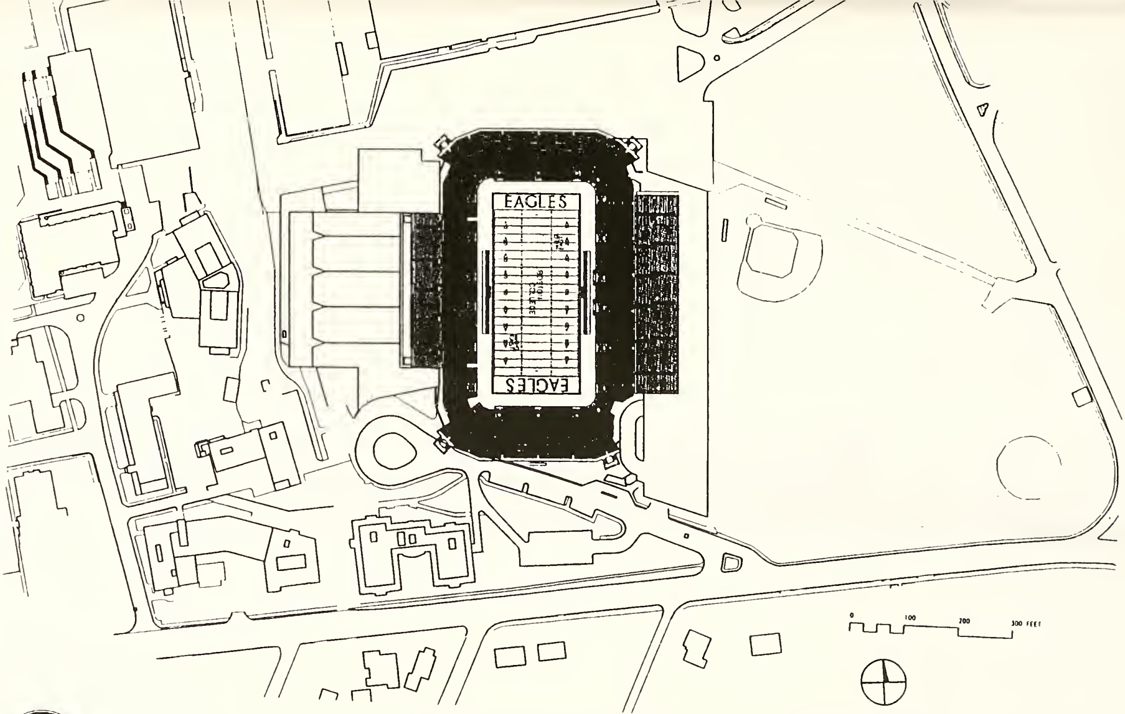
CAMBRIDGE MASSACHUSETTS 02138



Site Plan October 1993

Figure 5-3

Boston College

Proposed Stadium

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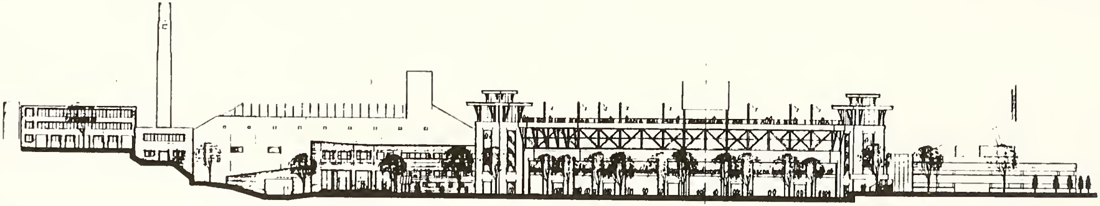
CAMBRIDGE MASSACHUSETTS 02138



South Elevation

Figure 5-4

Boston College

Proposed Stadium

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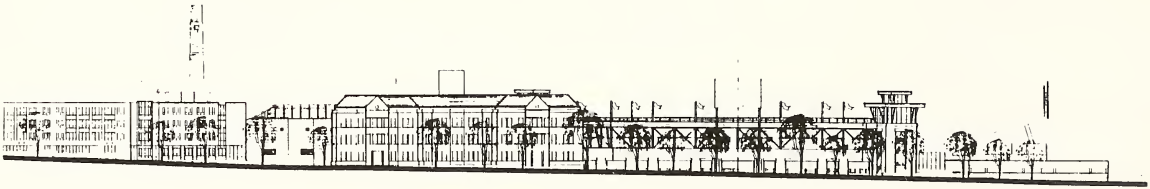

Beacon Street Section

Figure 5-5

Boston College

Proposed Stadium

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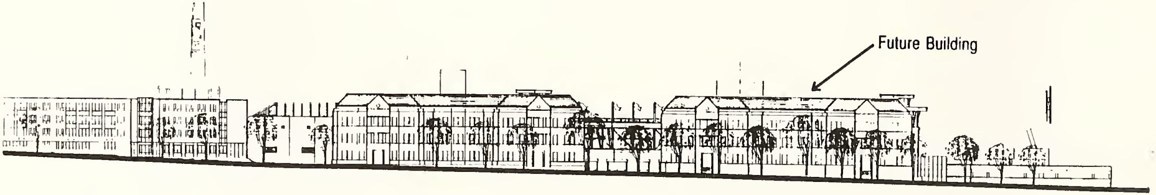

Beacon Street Section w/ Future Building

Figure 5-6

Boston College

Proposed Stadium

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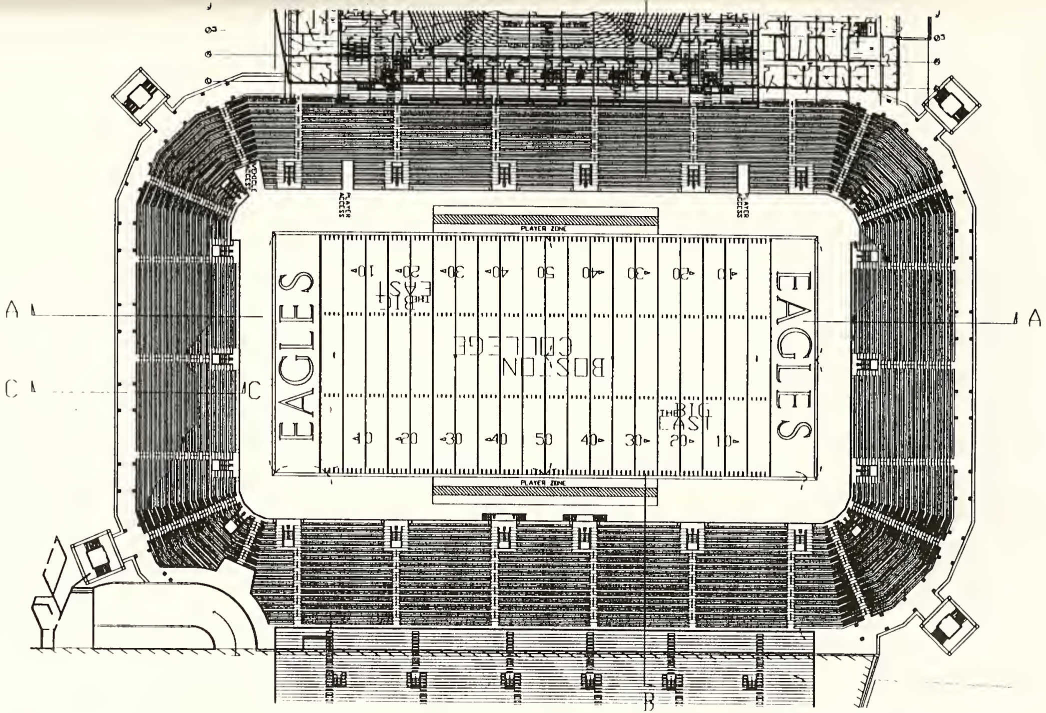

Figure 5-7

Lower Stands Plan

Boston College

Proposed Stadium

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140 MOUNT AUBURN STREET
CAMBRIDGE MASSACHUSETTS 02138

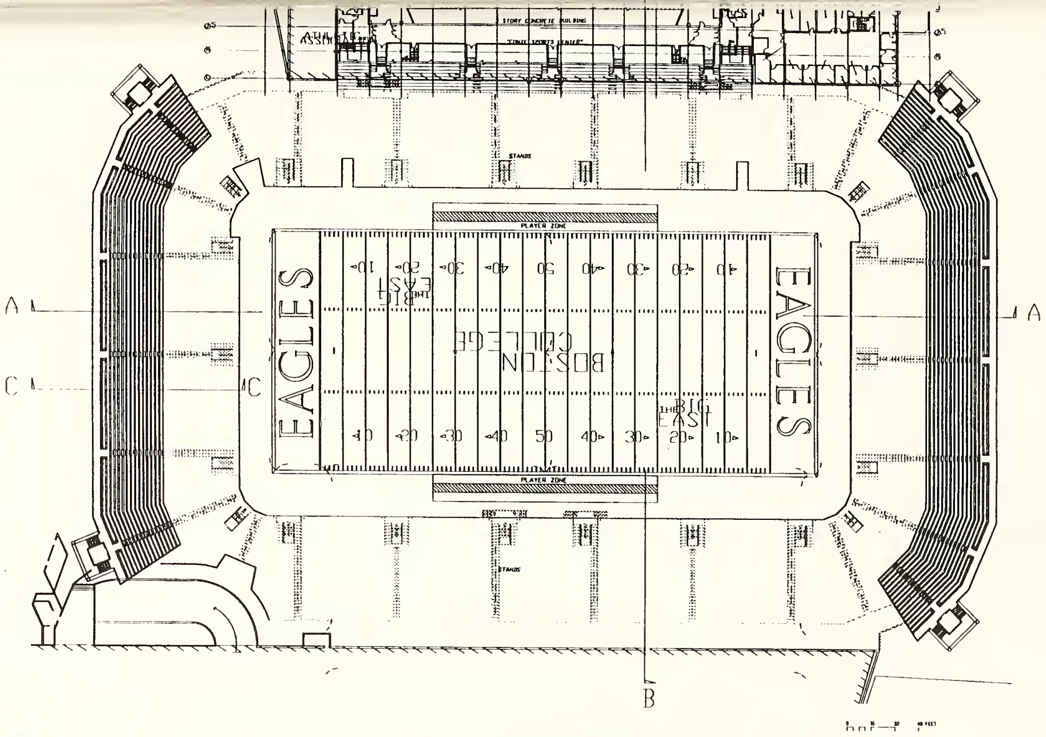


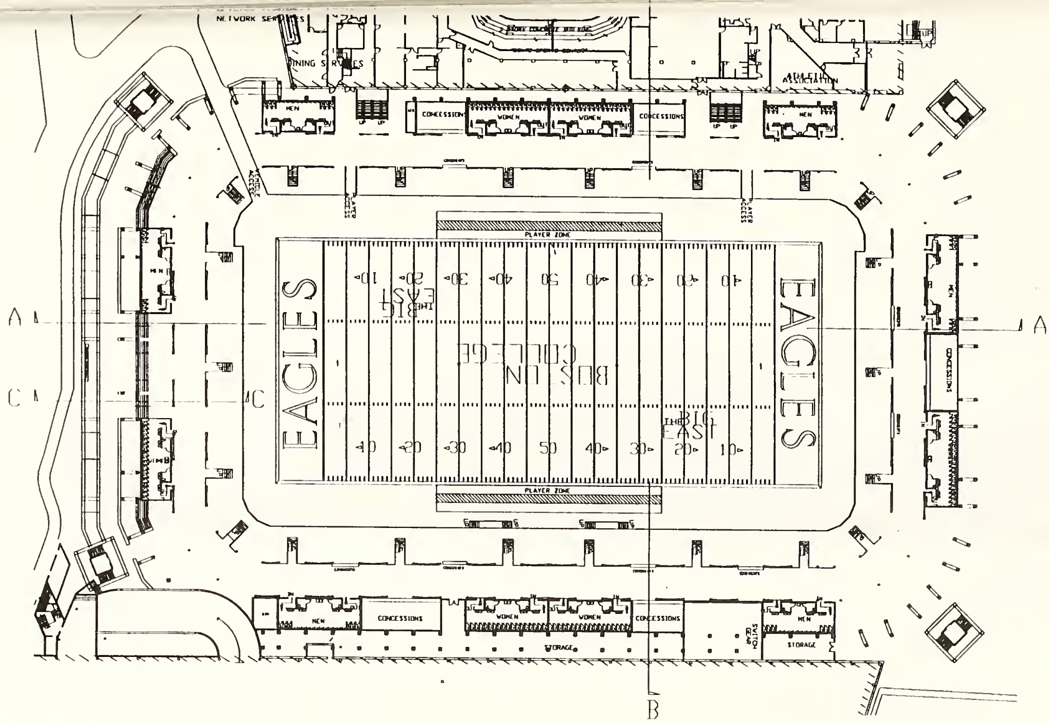
Figure 5-8

Upper Stands Plan

Boston College

Proposed Stadium

ARC
ARCHITECTURAL RESOURCES CAMBRIDGE, INC.
140 MOUNT AUBURN STREET
CAMBRIDGE MASSACHUSETTS 02138



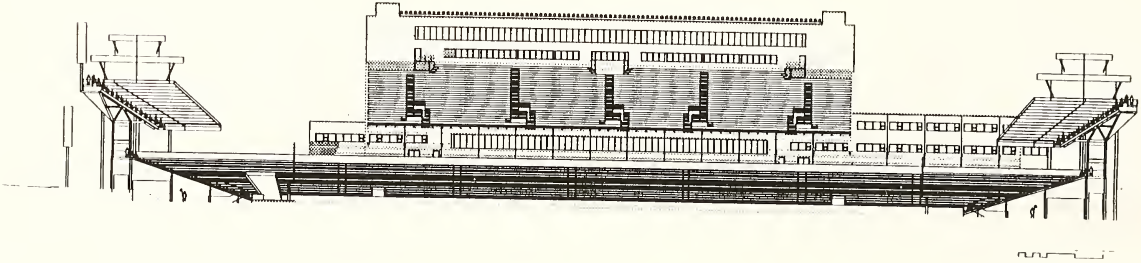
Concourse Plan

Figure 5-9

Boston College

Proposed Stadium

ARC ARCHITECTURAL RESOURCES CAMBRIDGE, INC.
140 MOUNT AUBURN STREET
CAMBRIDGE MASSACHUSETTS 02138



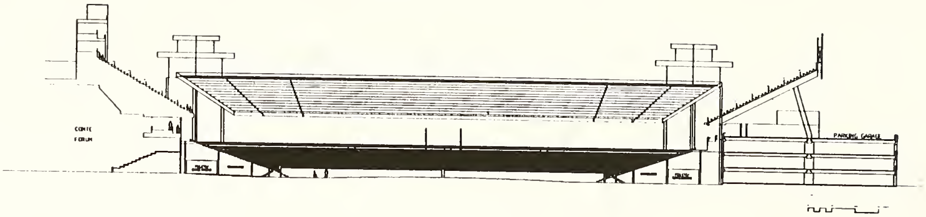
Section A~A

Figure 5-10

Boston College

Proposed Stadium

ARC ARCHITECTURAL RESOURCES CAMBRIDGE, INC.
140 MOUNT AUBURN STREET
CAMBRIDGE MASSACHUSETTS 02138



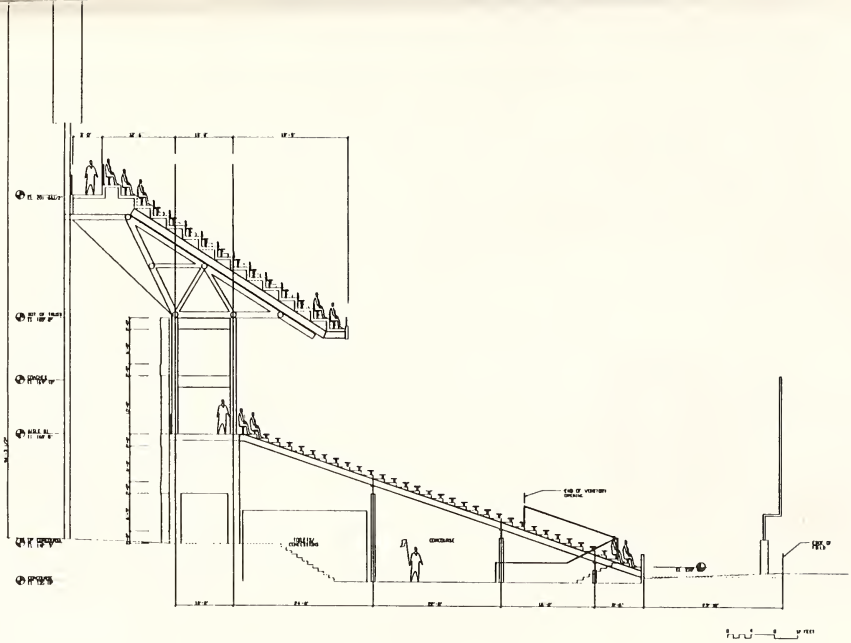
Section B~B

Figure 5-11

Boston College

Proposed Stadium

ARC
ARCHITECTURAL RESOURCES CAMBRIDGE, INC.
140 MOUNT AUBURN STREET
CAMBRIDGE MASSACHUSETTS 02138



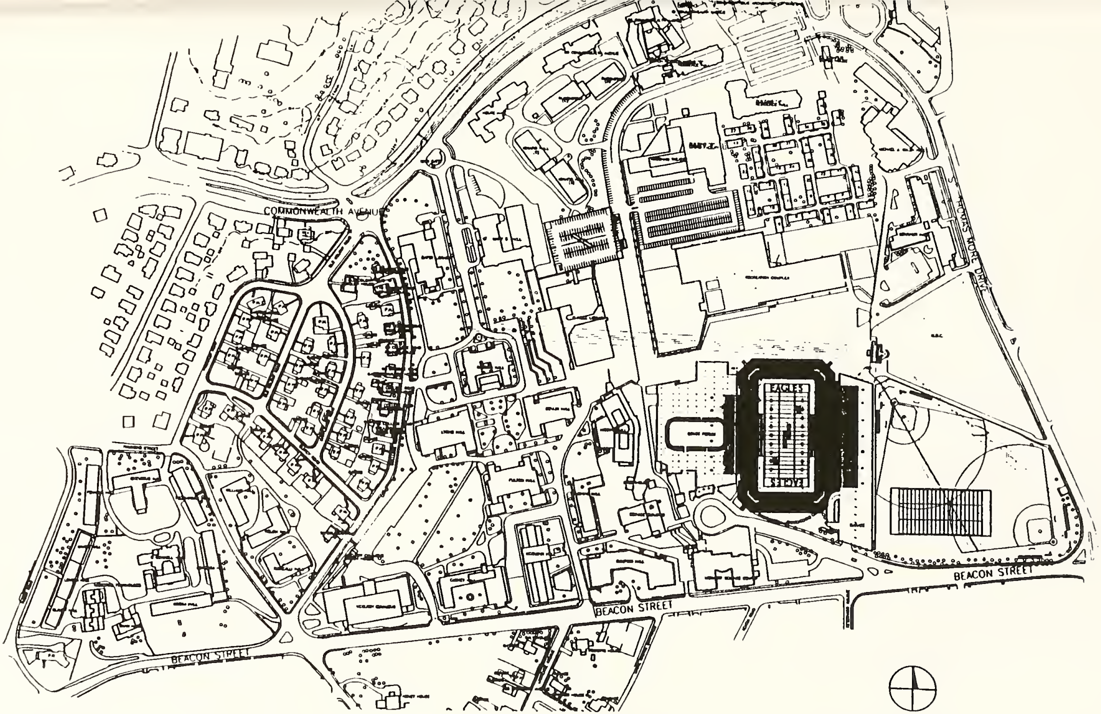
Section C~C

Figure 5-12

Boston College

Proposed Stadium

ARC ARCHITECTURAL RESOURCES CAMBRIDGE, INC.
140 MOUNT AUBURN STREET
CAMBRIDGE MASSACHUSETTS 02138



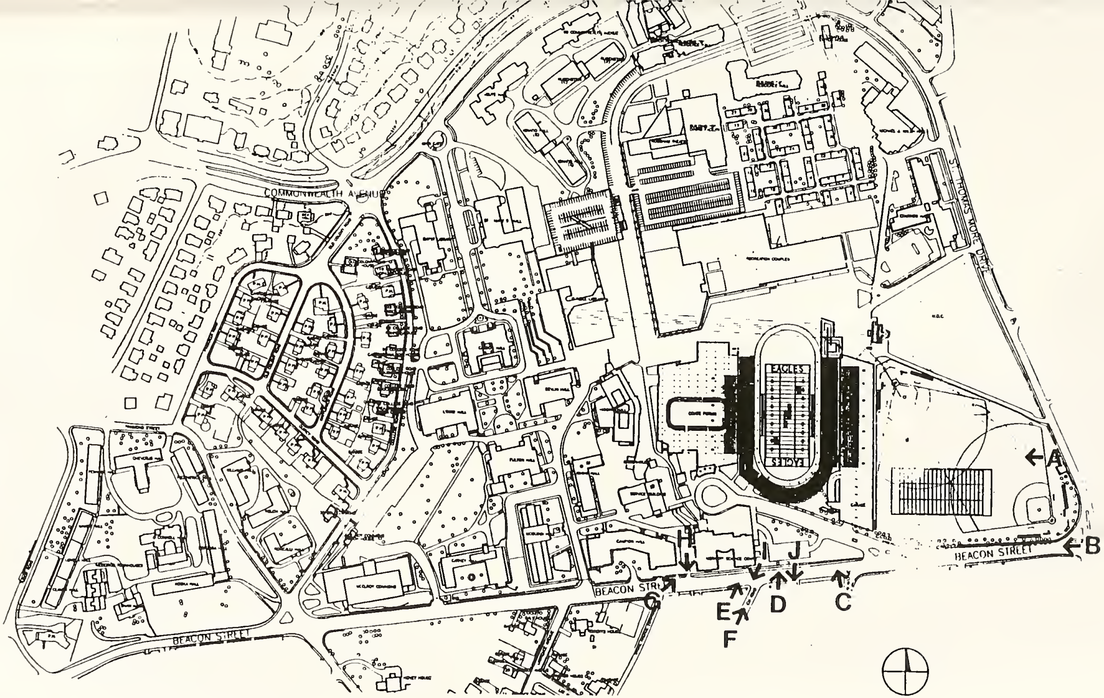
Site Plan April 1993

Figure 5-13

Boston College

Proposed Stadium

ARC ARCHITECTURAL RESOURCES CAMBRIDGE, INC.
140 MOUNT AUBURN STREET
CAMBRIDGE MASSACHUSETTS 02138



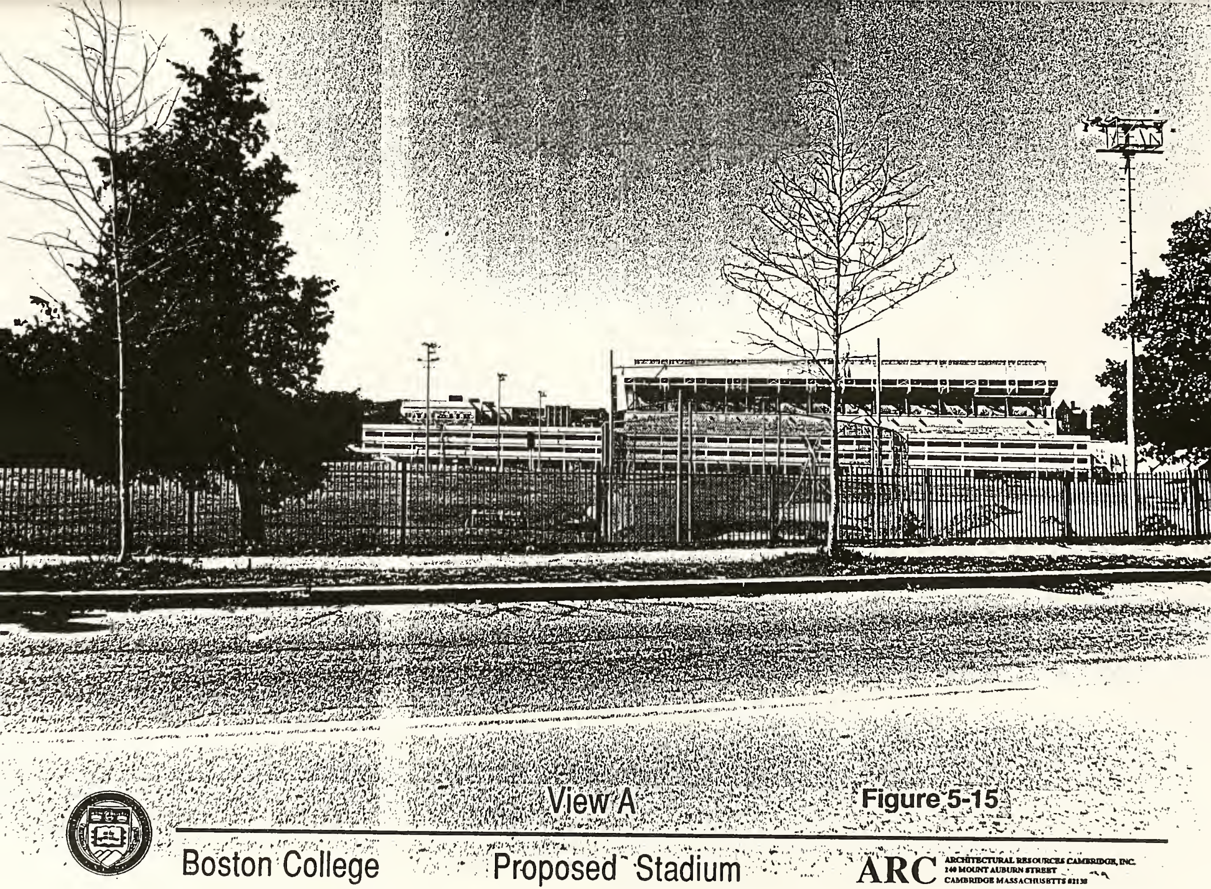
View Locations

Figure 5-14

Boston College

Proposed Stadium

ARC ARCHITECTURAL RESOURCES CAMBRIDGE, INC.
140 MOUNT AUBURN STREET
CAMBRIDGE MASSACHUSETTS 02138



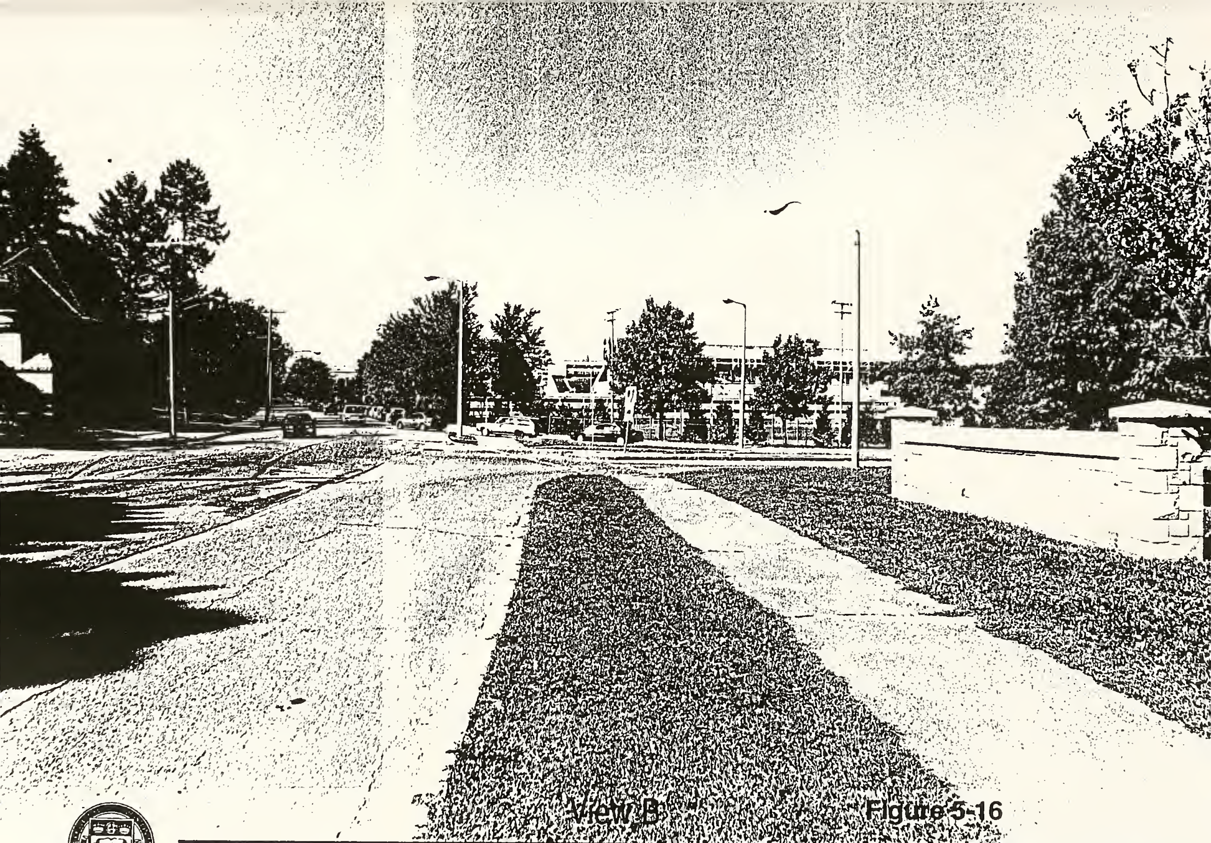
View A

Figure 5-15

Boston College

Proposed Stadium

ARC ARCHITECTURAL RESOURCES CAMBRIDGE, INC.
240 MOUNT AUBURN STREET
CAMBRIDGE MASSACHUSETTS 02138



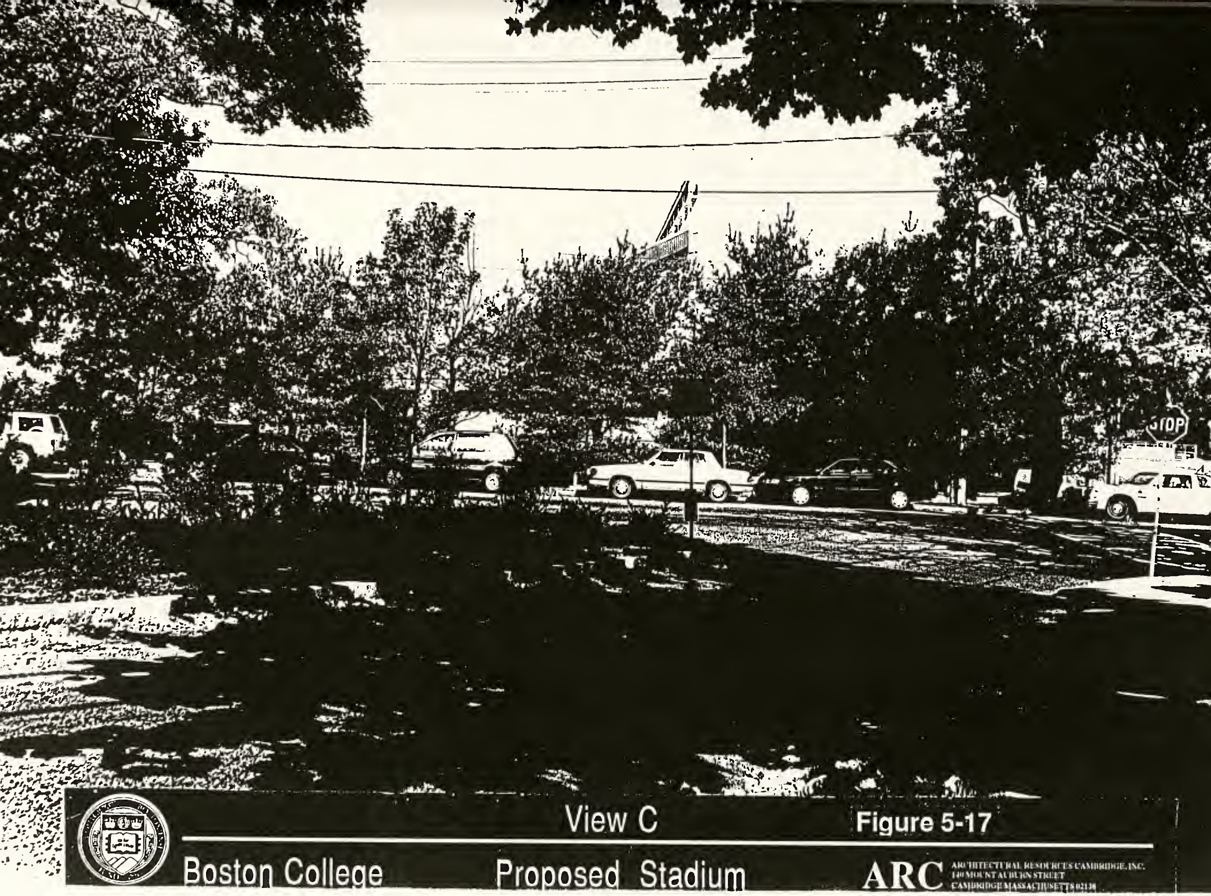
View B

Figure 5-16

Boston College

Proposed Stadium

ARC
ARCHITECTURAL RESOURCES CAMBRIDGE, INC.
[illegible] MOUNT AUBURN STREET
CAMBRIDGE MASSACHUSETTS 02138



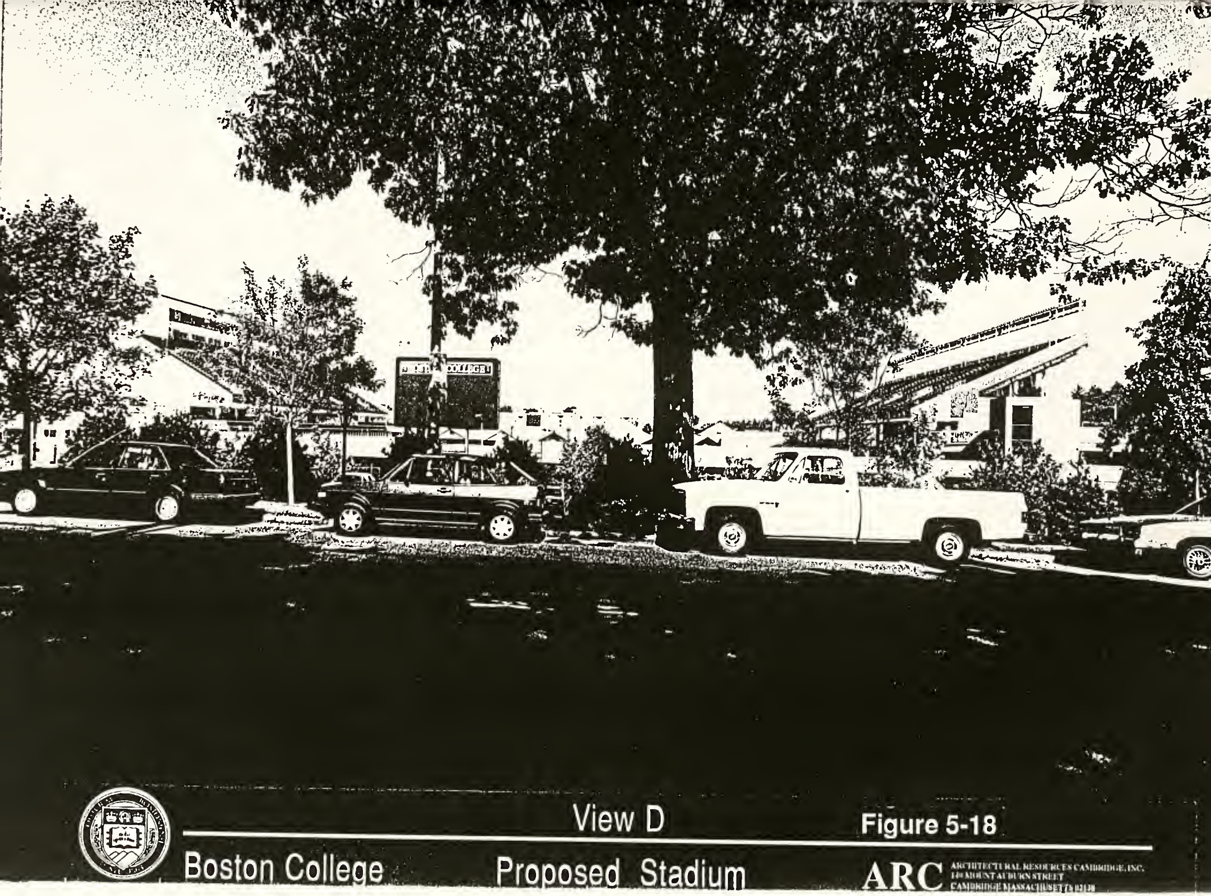
View C

Figure 5-17

Boston College

Proposed Stadium

ARC ARCHITECTURAL RESOURCES CAMBRIDGE, INC.
140 MOUNT AUBURN STREET
CAMBRIDGE MASSACHUSETTS 02138



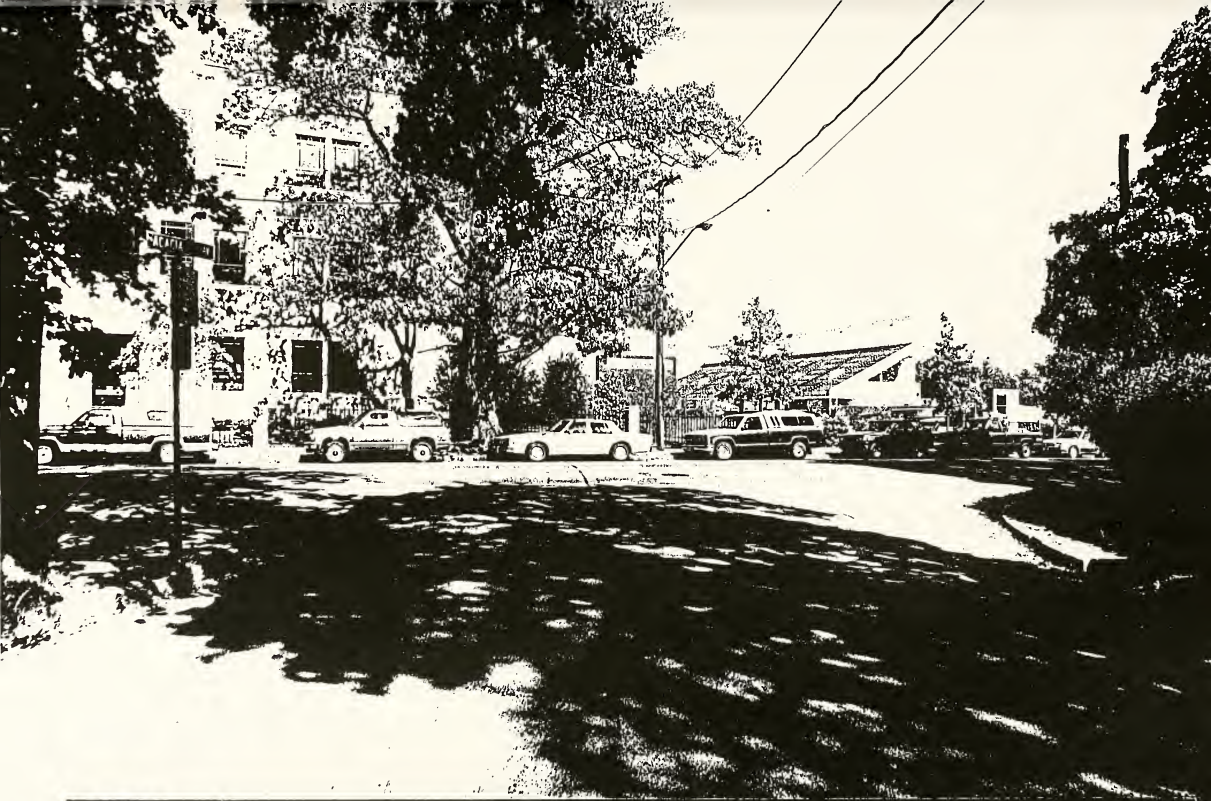
View D

Figure 5-18

Boston College

Proposed Stadium

ARC ARCHITECTURAL RESOURCES CAMBRIDGE, INC.
140 MOUNT AUBURN STREET
CAMBRIDGE MASSACHUSETTS 02138



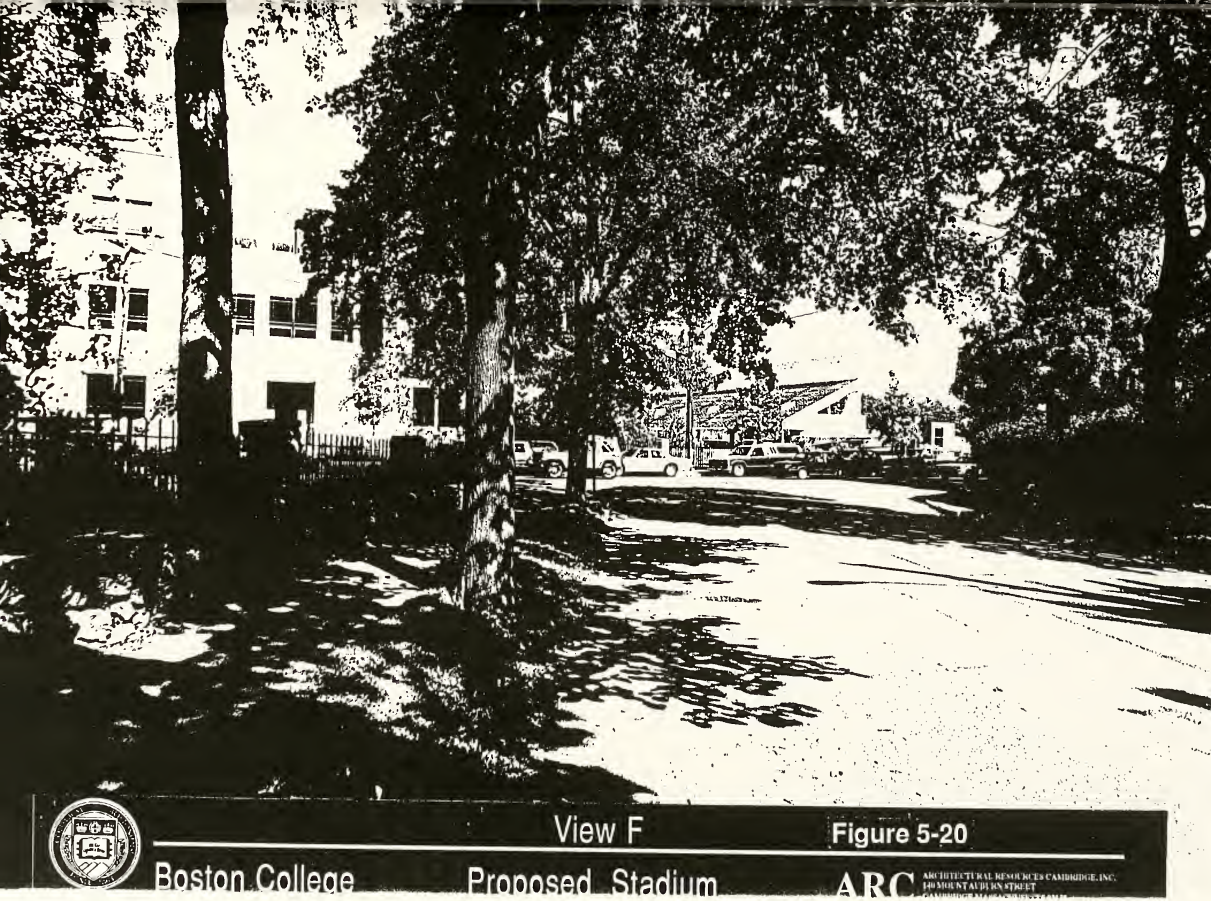
View E

Figure 5-19

Boston College

Proposed Stadium

ARC
ARCHITECTURAL RESOURCES CAMBRIDGE, INC.
140 MOUNT AUBURN STREET



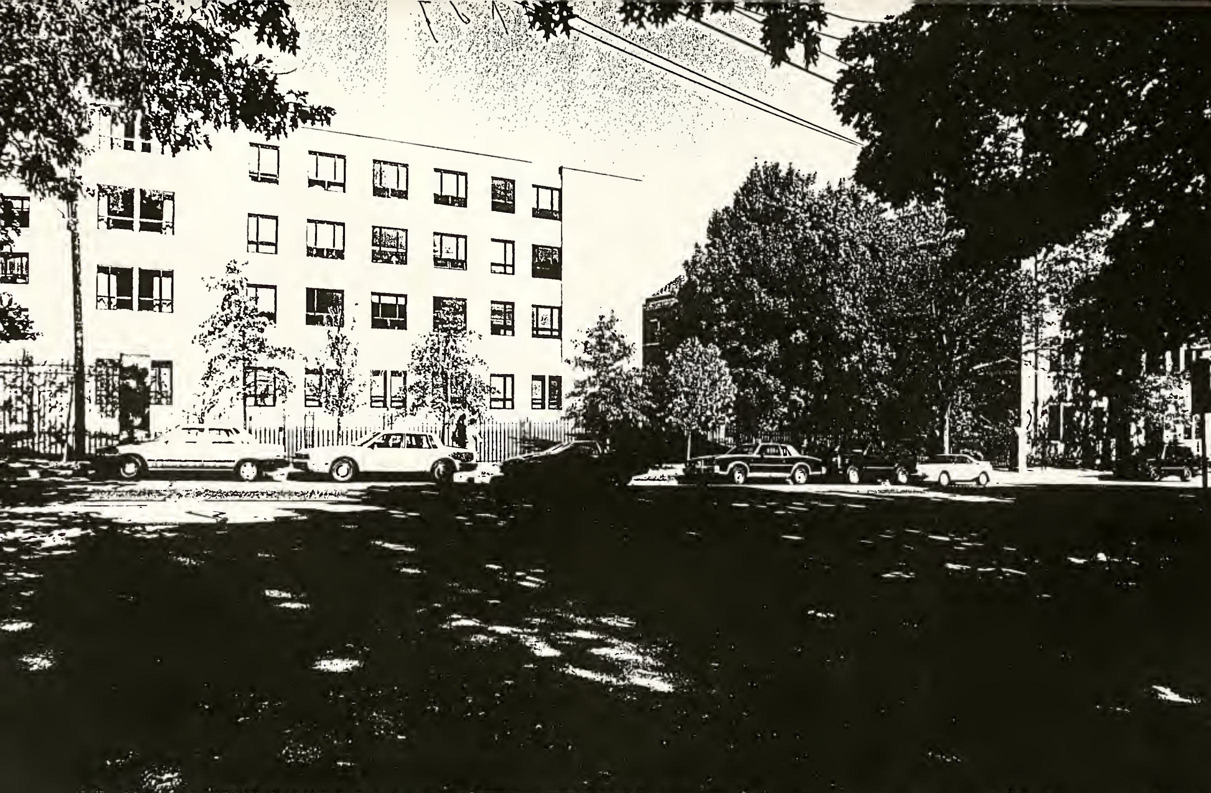
View F

Figure 5-20

Boston College

Proposed Stadium

ARC ARCHITECTURAL RESOURCES CAMBRIDGE, INC.
140 MOUNT AUBURN STREET



View G

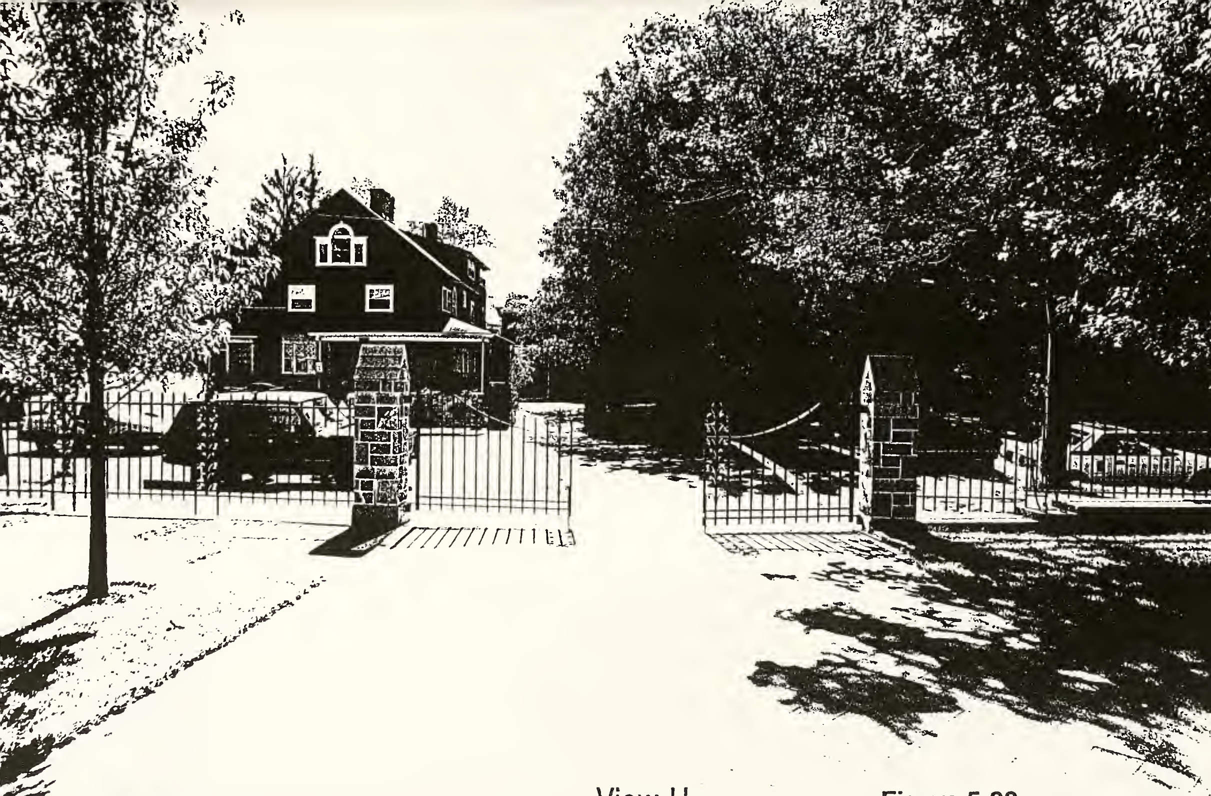
Figure 5-21

Boston College

Proposed Stadium

ARC

ARCHITECTURAL RESOURCES CAMBRIDGE, INC.
140 MOUNT AUBURN STREET
CAMBRIDGE MASSACHUSETTS



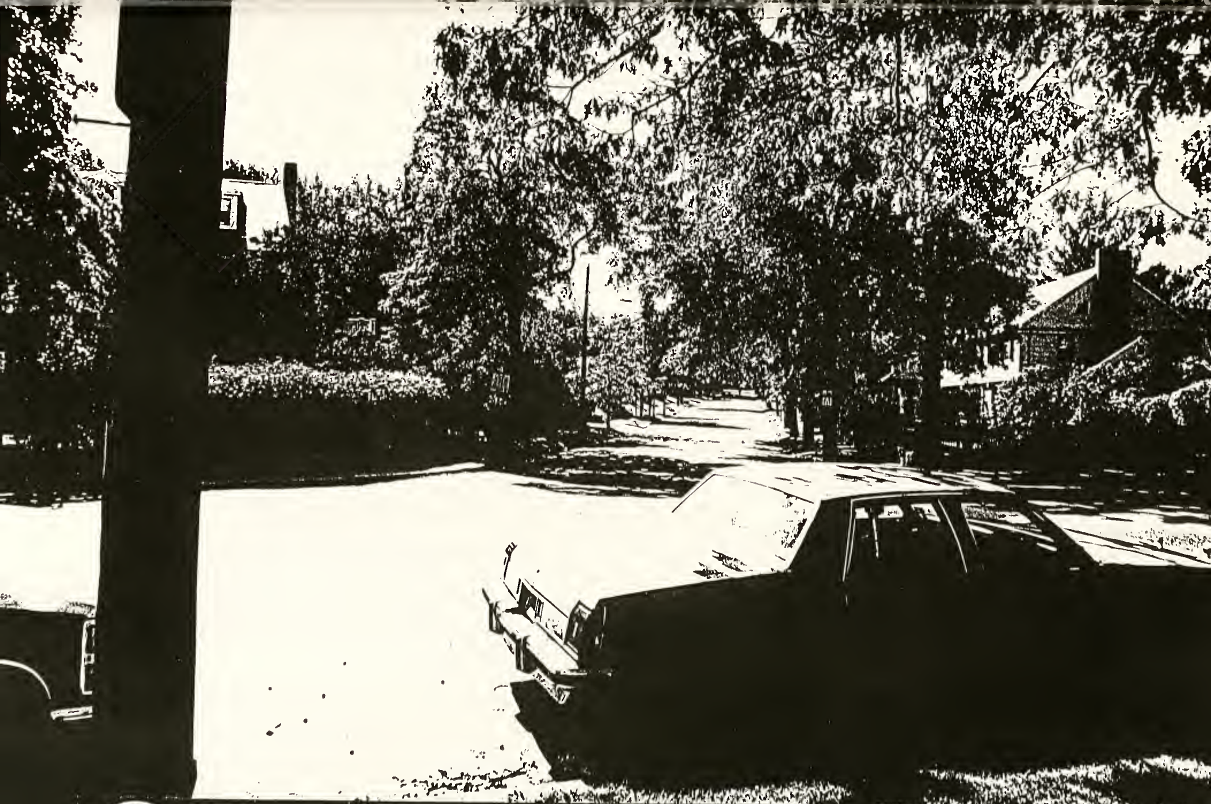
View H

Figure 5-22

Boston College

Proposed Stadium

ARC ARCHITECTURAL RESOURCES CAMBRIDGE, INC.
140 MOUNT AUBURN STREET
CAMBRIDGE MASSACHUSETTS 02138



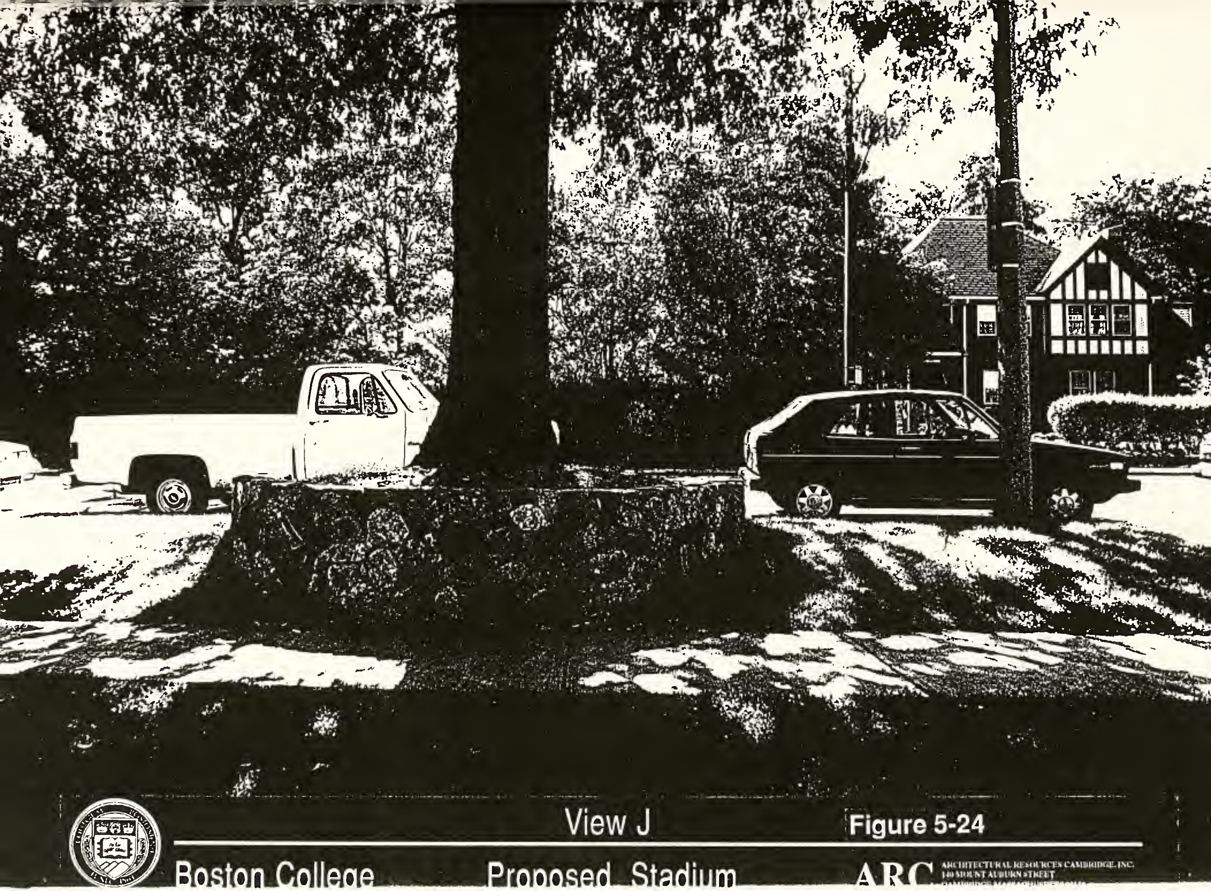
View I

Figure 5-23

Boston College

Proposed Stadium

ARC ARCHITECTURAL RESOURCES CAMBRIDGE, INC.
140 MOUNT AUBURN STREET



View J

Figure 5-24

Boston College

Proposed Stadium

ARC ARCHITECTURAL RESOURCES CAMBRIDGE, INC.
140 MOUNT AUBURN STREET

Boston
Redevelopment
Authority

Clarence J. Jones, *Chairman*
Paul L. Barrett, *Director*

SEP 1993
Received
Senior
Vice President

September 2, 1993

Dr. James P. McIntyre
Senior Vice President
Boston College
Brock House
78 College Road
Chestnut Hill, MA 02167

RE: Boston College Alumni Stadium Addition and Relocation of the Flynn Recreation Complex Scoping Determination

Dear Dr. McIntyre:

Enclosed is the Scoping Determination for Boston College's proposed Alumni Stadium addition and the proposed relocation of the Flynn Recreation Complex (the "Proposed Project"), for which you submitted an Institutional Master Plan Project Notification Form ("IMPPNF"), pursuant to Article 51 of the Boston Zoning Code and a Project Notification Form ("PNF") pursuant to Article 31 of the Code. This Scoping Determination requests information required by the Boston Redevelopment Authority in response to the IMPNF and PNF submitted on April 16, 1993.

The proposed Amendment to the Boston College Master Plan which requests the expansion of Alumni Stadium will be reviewed in accordance with the requirements of Article 51, Section 51-34, Update, Renewal and Amendment of Institutional Master Plans and Article 31 of the Code, development review of projects. The proposed Flynn Recreational Complex and the Alumni Stadium expansion will be reviewed pursuant to Article 31, Section 31-4, which requires development review of proposed projects whose gross floor area exceed 50,000 or more square feet, as well as Article 51 which requires a consistency determination for projects that are included in the approved Boston College Master Plan for Physical Facilities Development.

The Authority is particularly concerned with the ability of the University to adequately address its parking needs with the recently enacted parking bans being instituted in Newton, Brookline, and Boston. These bans preclude parking on streets that Boston College has previously relied upon to meet its parking needs. The Authority will carefully analyze the cumulative impacts of the parking bans.

One City Hall Square
Boston, MA 02201-1007
Telephone (617) 722-4300
Fax (617) 367-5916

The Scoping Determination is being conveyed at this date because the Redevelopment Authority, at the request of the Boston College Task Force, provided additional time for the Task Force and community to review and respond to the Project Notification Form.

Additional information may be required during the course of review of the Proposed Project. If you have any questions regarding the Scoping Determination or the review process in connection with the Proposed Project, please contact me at 722-4300, extension 4387.

Sincerely,

Beverley E. Johnson

Beverley Johnson
Director of Institutional Planning

Enclosure

BOSTON REDEVELOPMENT AUTHORITY

SCOPING DETERMINATION

BOSTON COLLEGE
ALUMNI STADIUM ADDITION AND RELOCATION OF FLYNN RECREATION COMPLEX

SUBMISSION REQUIREMENTS FOR DRAFT PROJECT IMPACT REPORT

PROPOSED PROJECT:	Boston College Alumni Stadium Expansion Relocation of Flynn Recreation Complex
PROJECT LOCATION:	Boston College, Lower Campus 140 Commonwealth Avenue Boston, MA 02167
APPLICANT:	Trustees of Boston College

The Boston Redevelopment Authority ("Authority") is issuing this Scoping Determination pursuant to Article 51, Section 51-34, and Article 31, Section 31-4 of the Boston Zoning Code (the "Code"). The applicant filed a combined Institutional Master Plan Project Notification Form ("IMPNF") and Project Notification Form ("PNF") on April 16, 1993. The Scoping Determination requests information required by the BRA for its review of the Proposed Project in connection with the following:

(a) Development Review of the proposed relocation of the Flynn Recreation Complex pursuant to Article 31 and Article 51 of the Code.

(b) Development Review of the proposed Alumni Stadium Expansion pursuant to Article 51 and Article 31 of the Code.

PREAMBLE

1. Relocation of Flynn Recreation Complex

The BRA is reviewing the Proposed Project pursuant to multiple sections of the Code. The proposed Flynn Recreational Complex project is being reviewed in voluntary compliance with Article 31, Development Review Requirements, which sets out a comprehensive procedure for project review and requires the BRA to review the design, transportation, environmental, and other impacts of proposed projects. Article 31 requires the submission of a satisfactory Final Project Impact Report ("FPIR") prior to the issuance of a building permit. The proposed project was included in the Boston College Master Plan for Physical Facilities Development (1991-2001).

2. Proposed Alumni Stadium Expansion

The proposed Alumni Stadium Expansion project is located within an Institutional Subdistrict and would require an amendment of the Boston College Master Plan and is therefore subject to review pursuant to Article 51 of the Code. Prior to the issuance of a building permit for the Proposed Project, the Director of the BRA must certify: (i) the Institutional Master Plan Amendment conforms to the provisions of Article 51; (ii) the Institutional Master Plan conforms to the Allston-Brighton Neighborhood Plan, and the general plan for the city as a whole; (iii) on balance, nothing in the Institutional Master Plan will be injurious to the neighborhood or otherwise detrimental to the public welfare, weighing all the benefits and burdens.

Additionally, the proposed project will be reviewed under Article 31 of the Boston Zoning Code in order to ensure that all issues are thoroughly analyzed and the proposed mitigation strategies are effective.

I. BOSTON COLLEGE STADIUM AND RELOCATION OF FLYNN RECREATION COMPLEX

Boston College is a not-for-profit, educational institution located partially in the Brighton neighborhood of Boston and partially in Newton. Boston College has an enrollment of 14,000 undergraduate, graduate and professional students. The College occupies approximately one million square feet of land and has a Boston campus FAR of approximately 2.0.

The Proposed Projects are located within Boston College's Lower Campus, which is bounded by Commonwealth Avenue, Thomas More Drive, Beacon Street and the Boston-Newton line. The Proposed Project would increase the present capacity of Alumni Stadium from 32,500 spectators to 44,500 spectators, an addition of 12,000 seats. The College also proposes to replace the existing Flynn Recreation Complex on the Lower Campus. The new recreation complex (180,000 square feet) will be located underneath and immediately adjacent to the proposed north end grandstand. The new recreation complex will house athletic facilities for student and faculty use, including basketball and tennis courts, weight rooms, lockers and showers. Some athletic offices will also be located in the proposed building.

II. BOSTON COLLEGE MASTER PLAN

On March 12, 1992 the Authority approved the Boston College Master Plan for Physical Facilities Development (1991-2001). On April 16, 1993, Boston College submitted to the BRA a combined Institutional Master Plan Project Notification Form ("IMPNF"), for the proposed relocation of the Flynn Recreation Complex and the proposed expansion of Alumni Stadium, (the "Proposed projects"). The BRA will review the IMPNF pursuant to Article 51 and Article 31 of the Boston Zoning Code.

The proposed relocation of the Flynn Recreational Complex was identified in Chapter Eight of the College's ten (10) year Master Plan as a future project, to be located on site A-3. Site A-3 is also the site of the present proposed projects. The proposed Flynn Recreational Complex project is being reviewed in voluntary compliance with Article 31,

Development Review Requirements, which sets out a comprehensive procedure for project review and requires the BRA to review the design, transportation, environmental, and other impacts of proposed projects. Article 31 requires the submission of a satisfactory Final Project Impact Report ("FPIR") prior to the issuance of a building permit.

The proposed expansion of Alumni Stadium was not identified in the Master Plan and is being reviewed pursuant to Article 51 of the Code. Prior to the issuance of a building permit for the Proposed Project, the Director of the BRA must also certify: (i) the Institutional Master Plan Amendment conforms to the provisions of Article 51; (ii) the Institutional Master Plan conforms to the Allston-Brighton Neighborhood Plan, and the general plan for the city as a whole; (iii) on balance, nothing in the Institutional Master Plan will be injurious to the neighborhood or otherwise detrimental to the public welfare, weighing all the benefits and burdens. Additionally, the BRA has determined that given the complexity of the issues associated with the proposed expansion of Alumni Stadium, the proposed project will also be reviewed under Article 31 of the Boston Zoning Code in order to ensure that all issues are thoroughly analyzed and the proposed mitigation strategies are effective.

III. COMMUNITY REVIEW OF THE PROPOSED PROJECTS

The Allston-Brighton/Boston College Community Relations Committee ("Task Force") has worked with Boston College, the Boston Redevelopment Authority ("Authority") and the Mayor's Office of Neighborhood Services ("MONS") over the past six year period to complete the campus master planning process associated with the university's 10 year Master Plan. The Task Force and Boston College executed a Memorandum of Understanding ("MOU") for the Boston College Master Plan on January 27, 1992. The Authority recognizes through the MOU that the Task Force will be the appropriate community review body for Master Plan projects and future amendments to the Master Plan prior to discussions with other concerned community groups and individuals. The Task Force will review the proposed Flynn Recreation Complex and the proposed Alumni Stadium Expansion. The DPIR must address the proposed project's timetable for review with the Task Force (see Section A (6) of the Scope).

IV. DEVELOPMENT REVIEW REQUIREMENTS - ARTICLE 31

SUBMISSION REQUIREMENTS

In addition to full-size scale drawings, 15 copies of a bound booklet containing all submission materials reduced to size 8-1/2" x 11", except where otherwise specified, are required. The booklet should be printed on both sides of the page. In addition, an adequate number of copies must be available for community review. A copy of this Scoping Determination should be included in the booklet for review.

A. GENERAL INFORMATION

1. Applicant Information

a. Development Team

(1) Names

(a) Developer (including description of development entity and type of corporation)

(b) Attorney

(c) Project consultants

(2) Business address and telephone number for each

(3) Designated contact for each

b. Legal Information

(1) Legal judgments or actions pending concerning the Proposed Projects.

(2) History of tax arrears on property owned in Boston by the Applicant.

(3) Evidence of site control over the project area, including current ownership and purchase options of all parcels in the proposed projects, all restrictive covenants and contractual restrictions affecting the proponent's right or ability to accomplish the Proposed Projects and the nature of the agreements for securing parcels not owned by the Applicant.

(4) Nature and extent of any and all public easements into, through, or surrounding the site.

2. Financial Information (See Appendix 1 for required financial information)

Development and Operating Pro Formas must be provided for the Proposed Project.

a. Full disclosure of financing references

b. Development Pro Forma

c. Ten (10) Year Operating Pro Forma

3. Project Area

a. Description of metes and bounds of project area or certified survey of project area

4. Public Benefits

The DPIR shall contain information on public benefits associated with the Proposed Projects, such as:

a. Development Impact Project Contribution and Jobs Contribution Grant specifying amount of housing linkage and jobs linkage contributions and methods of housing linkage contribution (housing payment or housing creation and jobs linkage contribution (jobs payment or a jobs creation proposal).

b. Existing and estimated future Payment In Lieu Of Taxes (PILOT).

c. Anticipated employment levels including the following:

    (1) Estimated number of construction jobs

    (2) Estimated number of permanent jobs

d. Housing and jobs linkage payments.

e. Other public benefits, if any, to be provided.

5. Regulatory Controls and Permits

a. Existing zoning requirements, zoning computation forms, and any anticipated requests for zoning relief should be explained.

b. Anticipated permits required from other local, state, and federal entities with a proposed application schedule should be noted.

c. If the Executive Office of Environmental Affairs has deemed that the Proposed Projects are subject to the Massachusetts Environmental Policy Act ("MEPA"), required documentation should be provided, including copies of the Environmental Notification Form ("ENF") and a proposed schedule for coordination with BRA procedure.

6. Community Groups

a. Names and addresses of project area owners, abutters, and also any community groups which, in the opinion of the applicant, may be substantially interested in or affected by the Proposed Projects.

b. A list of meetings held and proposed with the Task Force, any other community groups and interested parties.

B. TRANSPORTATION COMPONENT

A Transportation Access Plan shall be prepared as defined by the Scope of Services outlined in Appendix 2.

C. ENVIRONMENTAL PROTECTION COMPONENT

1. Wind

A qualitative analysis of the potential wind impacts of the proposed project at the pedestrian level shall be required for the DPIR. This analysis shall determine potential pedestrian level winds adjacent to and in the vicinity of the project site and shall identify any areas where wind velocities are expected to exceed acceptable levels, including the Authority's guideline of an effective gust velocity of 31 mph not to be exceeded more than 1% of the time. Particular attention shall be given to the potential wind effects of the new building element of the proposed project.

Areas of interest for the analysis shall include public and other areas of pedestrian use, including, but not limited to, entrances to the project buildings, sidewalks adjacent to and in the vicinity of the proposed projects and pedestrian areas in the vicinity of the project development.
For areas where wind speeds are projected to exceed acceptable levels, measures to reduce wind speeds and to mitigate potential adverse impact shall be identified.

Should the qualitative analysis indicate the possibility of excessive pedestrian level wind speeds, additional studies, including quantitative wind tunnel testing, may be required for the Final Project Impact Report (FPIR).

2. Shadow

A shadow analysis shall be required for existing and build conditions for the hours 9:00 a.m., 12:00 noon, and 3:00 p.m. for the vernal equinox, summer solstice, autumnal equinox, and winter solstice. It should be noted that due to time differences (daylight savings vs. standard), the autumnal equinox shadows would not be the same as the vernal equinox shadows and therefore separate shadow studies are required for the vernal and autumnal equinoxes.

The shadow impact analysis must include net new shadows as well as existing shadow and must clearly show the incremental impact of the proposed building(s).

Particular attention shall be given to existing or proposed public open spaces and major pedestrian areas, including, but not limited to, the sidewalk adjacent to and in the vicinity of the proposed projects and pedestrian areas and other public open spaces within the project vicinity. Design or other mitigation measures to limit or minimize any adverse shadow impact shall be identified.

3. Solid and Hazardous Wastes

The DPIR shall describe the generation, storage, and disposal of all solid wastes from the operation of the proposed project. The DPIR shall identify the specific nature of the wastes and the quantities to be generated and shall describe the management and disposal of these wastes. Measures to prevent the release of any contaminants shall be described. In addition, measures to promote recycling and the reduction of waste generation are required and must be described in the DPIR.

The presence of any contaminated soil or groundwater shall be evaluated and remediation measures to ensure their safe removal and disposal shall be described. If an environmental site assessment has been completed, it should be summarized in the DPIR and the full report included as an Appendix document.

4. Air Quality

A future air quality (carbon monoxide) analysis shall be required for any intersection where level of service is expected to deteriorate to D and the project causes a 10 percent increase in traffic or where the level of service is E or F and the project contributes to a reduction of LOS. The methodology and parameters of the traffic-related air quality analysis shall be approved in advance by the Massachusetts Department of Environmental Protection and the Boston Redevelopment Authority. Mitigation measures to eliminate or avoid any violation of air quality standards shall be described.

5. Noise

An analysis of the potential noise impacts from the project's mechanical and exhaust systems and compliance with applicable regulations of the City of Boston shall be required. A description of the project's mechanical and exhaust systems and the locations shall be included. Measures to minimize and eliminate adverse noise impacts on nearby sensitive receptors shall be described.

6. Geotechnical Impact

An analysis of existing sub-soil conditions, groundwater levels, potential for ground movement and settlement during excavation, and potential impact on adjacent buildings and utility lines shall be required. The geotechnical

analysis shall include a description of the foundation construction methodology, the amount and method of excavation, and measures to prevent any adverse effects on adjacent buildings and utility lines.

7. Construction Impacts

A construction impact analysis shall include a description and evaluation of the following:

(a) potential dust and pollutant emissions and mitigation measures to control these emissions and avoid adverse impacts on residents of the adjacent neighborhood.

(b) potential noise impact and mitigation measures to minimize increase in noise levels and avoid adverse impacts on residents of the adjacent neighborhoods.

(c) location of construction staging areas and construction worker parking.

(d) construction schedule, including hours of construction activity.

(e) access routes for construction trucks and anticipated volume of construction truck traffic.

(h) method of demolition of the existing recreation complex, control of dust, emissions, asbestos removal, and disposal of demolition waste, including identification of disposal site.

(i) generation and disposal of construction debris.

(j) potential for the recycling of demolition and construction debris from the site.

(k) measures to protect the public safety, particularly of neighborhood residents and children.

(l) potential impacts of dewatering of site and mitigation measures to minimize such impacts.

8. Rodent Control

An analysis of the impact of project construction on rodent populations and a description of the proposed rodent control program, including frequency of application, and compliance with applicable City and State regulatory requirements shall be required.

D. URBAN DESIGN COMPONENT

The Proposed Projects elements should be developed so as to: (1) strengthen the overall urban design character of the Boston College Campus; and (2) enhance the relationship among existing buildings. The new construction should be compatible in footprint, massing, height, fenestration, details, and materials with existing campus buildings. The proposed new construction should also reinforce the existing pedestrian environment on and around the site and campus. In addition, the Proposed Project's elements should be designed and constructed so as to minimize the visual impact of the building mass as seen from the view angles of the surrounding community.

To further these goals, the Proposed Projects should be planned and designed such that treatment of the massing, facade design, and details shall ensure comfortable scale relationships and compatibility of character between the proposed buildings, existing institutional buildings and the nearby community and residential areas.

In order to determine that the Proposed Projects are: (a) architecturally compatible with surrounding structures; (b) exhibits an architectural concept that enhances the urban design features of the area in which it is located; and (c) augments the quality of the pedestrian environment, the following items must be submitted for the Schematic Design Phase:

(a) Written description of program elements and space allocation for each element.

(b) Plan for the surrounding area and district and sections at an appropriate scale (1" = 50' or larger) showing relationships of the Proposed Projects to the surrounding area and district:

  1. massing.
  2. building height.
  3. scaling elements.
  4. open space.
  5. pedestrian and vehicular circulation.

(c) Black and white "8x10" photographs of the site and neighborhood.

(d) Sketches and diagrams of earlier proposals to clarify design issues and massing options.

(e) Eye-level perspective (reproducible line drawings) showing the proposal in the context of the surrounding area.

(f) Aerial views of the project.

(g) Site sections at 1" = 16′ or 1" = 20" showing relationships to adjacent buildings and spaces.

(h) Site plan at an appropriate scale (1" = 40′ or larger) showing:

  1. general relationships of proposed and existing adjacent buildings and open space.

  2. open spaces defined by buildings on adjacent parcels and across streets.

  3. general location of pedestrian ways, driveways, parking, service areas, streets, and major landscape features.

  4. pedestrian, handicapped, vehicular and service access and flow through the parcel and to adjacent areas.

  5. survey information, such as existing elevations, benchmarks, and utilities.

  6. phasing possibilities.

  7. construction limits.

(i) Facade design model at 1" = 8′.

(j) Drawings at an appropriate scale (e.g., 1" = 8′) describing architectural massing, facade design and proposed materials including:

  1. building and site improvement plans.

  2. elevations in the context of the surrounding area.

  3. sections showing organization of functions and spaces.

  4. preliminary building plans showing ground floor and typical upper floor(s).

(k) Proposed schedule for submittal of design development materials.

Submission materials for Design Development and Contract Documents submissions can be found in Appendix 2.

E. INFRASTRUCTURE SYSTEMS COMPONENT

The Infrastructure Systems Component preliminary response submits anticipated volume requirements/generation for water, sewerage, electricity/energy, and gas. For the DPIR, a more detailed analysis is required as described in Section 31-10 of the Article 31:

The applicant's submission shall include an evaluation of the Proposed Project's impact on the capacity and adequacy of existing water, sewerage, energy (including gas and steam), and electrical utility systems (including telephone, fire alarm, computer, cable, etc.), and the need reasonably attributable to the Proposed Project for additional systems facilities.

Any infrastructure system upgrading or connection requiring a significant public or utility investment, or creating a significant disruption in vehicular or pedestrian circulation, or affecting any public or neighborhood park or streetscape improvements, constitutes an impact which must be mitigated. The DPIR must research and demonstrate anticipated impacts in this regard, including specific mitigation measures, and must include all other proposed projects in the vicinity, including those which have submitted a PNF or detailed Master Plan, as background for analysis. Boston College's Ten (10) Year Master Plan buildout projections should be included in the background growth.

Thorough consultation with the planners and engineers of the utilities will be required, and should be referenced in the Infrastructure Systems Component report.

Particular consideration should be given to the system capacity in handling peak loading/demand conditions, comparison with existing conditions, any potential impacts on the MWRA easement area, the location and configuration of connections (existing vs. new, etc.) and separation of storm drain and sanitary sewer systems. Measures taken to insure continuity of service to other utility users should be referenced.

1. WATER AND SEWER SYSTEMS

The Water and Sewer Systems Analysis must include the following:

a. Estimated water consumption and sewer generation from the Proposed Projects and the basis for such estimate. Include separate calculations for air conditioning system make-up water.

b. Description of the capacity and adequacy of water and sewer systems and an evaluation of the impacts of the Proposed Projects on those systems. This evaluation should take into account the age of the system components adjacent to the site. Diagrams of the subject systems, showing proposed or existing connections, should be included. Detail methods of protection or proposed relocation of BWSC sewer lines and water mains.

c. Identification of measures to conserve resources, including any provisions for recycling.

d. Description of the Proposed Project's impacts on the water quality of water bodies that could be affected by the project. Include the impact of on-site storm drainage on water quality. Description of mitigation measures to reduce or eliminate impacts on water quality.

e. Brief description of fire protection systems and connections.

Thorough analysis and continuing discussions with BWSC (and other applicable utilities) are required. Water supply systems adjacent to the project and servicing the project should be looped so as to minimize public hazard or inconvenience in the event of a main break.

2. ENERGY SYSTEMS

The Energy Systems Analysis must include the following:

a. Description of energy requirements of the project and evaluation of project impacts on resources and supply.

b. Description of measures to conserve energy usage and consideration of the feasibility of including solar energy provisions or other on-site energy provisions.

c. Detail the energy source of the interior space heating; how obtained, and, if applicable, plans for reuse of cooling system condensate.

d. Brief description of emergency power capabilities.

The location of transformer and other vaults required for electrical distribution or ventilation must be chosen to minimize disruption to pedestrian paths and public improvements both when operating normally and when being serviced, and must be described.

3. OTHER SYSTEMS - should be included in similar analyses if applicable: gas, steam, telephone, cable, fiberoptic communications, etc.

Appendix 1

REQUIRED FINANCIAL INFORMATION

REQUIRED FINANCIAL INFORMATION
BOSTON COLLEGE

DEVELOPMENT PRO FORMA includes all the information normally found in a development pro forma, by phase. This includes, but is not limited to:

- Land costs, per land square foot and total, by parcel, including any incremental disposition cost attributed to the project.
- Attribution of acquisition expense over project components (per FAR square foot, clinical, research, office, etc.).
- All hard costs on a per-unit and total basis by phase (disaggregated into base building, tenant improvement work, site work, furniture, fixtures and equipment, FF&E, etc.).
- All soft costs on a per-unit and total basis, (disaggregated into individual line items such as architectural, engineering, legal, accounting, and developer's fees, and any other professional fees, insurance, permits, etc.).
- All contingencies, on a per-unit and total basis, by phase (specify whether contingency is on hard costs, soft cost, or total cost).
- All assumptions regarding financing terms on acquisition, pre-development, construction and permanent loans, by phase (including financing fees, interest rates, drawdown assumptions, terms, participations, amortization).
- Calculation of housing and jobs linkage obligations, and anticipated payment method (over term of obligation or on a net present value basis).
- Any other project-related expenses not within any of the above categories.
- Calculation of Total Development Cost (TDC) by component, including total and per unit breakdown (e.g., per square foot clinical, research, office, etc.).
- Sources of debt and equity for total project costs.
- Projected financing sources, including bond issuing agencies such as BIDFA, banks, institutional investors, private, corporate or government donors (an analysis of the costs versus benefits of the financing options, including interest costs and loan terms, as well as a comparison between available sources, should be included).

10-YEAR OPERATING PRO FORMA includes all the information normally found in an operating pro forma, on a yearly basis. This includes, but is not limited to:

- Tabulation of gross and net (leasable) square feet for all clinical, research, office, or other use spaces.

- Schedule of all rents on a per square foot and total basis of space not operated directly by the institution.

- Anticipated operating expenses on per square foot and total basis, and clear explanation of division of expenses between owner and tenant (includes all commercial space).

- Tenant inducements, if any, including rent concessions (indicate magnitude of discount from market rates), free rent, tenant improvement allowances, etc. for commercial space.

- All other expense assumptions including property management fees.

- Anticipated leasing patterns (5 year, 10 year, etc.), lease-up rates, etc., for any commercial space.

- Calculation of debt service.

- Anticipated timing of future refinancing.

- For any research space, projections of grant income from government, corporate, philanthropic, or other entities.

Appendix 2

TRANSPORTATION ACCESS PLAN
SCOPE OF SERVICES

BOSTON COLLEGE
TRANSPORTATION MASTER PLAN
SCOPE OF WORK

In connection with the Master Plan approved by the Boston Redevelopment Authority on March 12, 1992, Boston College will prepare a Transportation Master Plan. The Transportation Master Plan will deal with the long-term impacts of anticipated developments at Boston College's Chestnut Hill campus upon the transportation systems of the City of Boston. In doing so, transportation operations both within and outside the Boston College Lower Campus will be examined.

The report will include the following:

1. A definition of existing traffic, transit, and parking conditions
2. An evaluation of the impacts of Boston College's long term development program on traffic, transit, and pedestrian activities as well as on parking demand.
3. Identification of appropriate measures to mitigate project impacts, including long-term project impact monitoring.

The report should take into consideration the effects of recently enacted parking bans within Newton, Brookline, and Boston.

In the preparation of the Transportation Master Plan, use should be made of all available existing studies and data, including the Transportation Access Plan prepared for the Housing and Dining Facilities project.

STUDY AREA

The study area will include the entire area in the vicinity of the Chestnut Hill Campus which is affected by traffic and parking activities caused by Boston College. The traffic impact area will be defined by the intersections given in Section 1.1.1 below. Parking impacts, particularly for football game days, will be studied within a larger area, as prescribed in Section 1.2 below.

DEFINITION OF TASKS

TASK 1 - DESCRIPTION OF EXISTING TRANSPORTATION CONDITIONS

The Existing Conditions component will present data on the various transportation systems serving Boston College, and will provide measures of levels of service, available capacity and other analysis as appropriate to identify any current deficiencies in those systems.

1.1 Traffic. Available traffic volume counts will be supplemented with new counts, as necessary. Based on data gathered from all sources, a preliminary base traffic volume network will be developed to represent existing morning, evening peak hour conditions. In addition, evening conditions before and after basketball games, and Saturday conditions before and after football games will be described. In describing existing conditions, vehicle trip generations characteristics of existing land uses at the College will be determined by estimates from College records and presented in disaggregate form by user group (faculty, staff or student).

Traffic mitigation measures currently in place, such as detail police during campus events, will also be described and evaluated

1.1.1 Study Intersections. Capacity analysis will be performed to determine level of service at the following intersections:

- Commonwealth Avenue/Lake Street/More Dr.
- Commonwealth Avenue/Foster St.
- Commonwealth Ave/South St.
- Commonwealth Ave/Chestnut Hill Ave
- Commonwealth Ave/Chestnut Hill Dr.
- Beacon Street/Chestnut Hill Ave.
- Beacon Street/Chestnut Hill Dr.

Level-of-service analysis will take into account the presence of pedestrian at all study intersections.

1.1.2 Trip Distribution. The origins of commuter trips to the combined campuses will be defined. On the basis of student/staff/faculty surveys and records, daily work and school trips will be presented by community of origin.For football game days, trip origins will be determined by survey of ticket holders.

1.1.3 Mode Choice. Among faculty, staff and students living off-campus, mode split for daily commuting trips will be presented. Transit, walk, bicycle and auto trips will be presented separately, and vehicle occupancy for auto trips will be estimated.

For football game days, modal choice will be determined by survey of ticket holders. Surveys will ascertain the degree to which multiple modes are used, and identify the location of transfer points. Vehicle occupancy will also be surveyed.

1.1.4 Accident Analysis. Available accident reports will be consulted for the most recent two-year period at the following locations.

- Commonwealth Ave./Lake St./More Dr.
- Commonwealth Ave./Corbin Rd.

Analysis of accident incidence will be performed by type, frequency, and time of day and year.

1.2 Parking. Parking supply and demand relationships for the combined campuses will be defined.

1.2.1 Supply. A parking inventory will be taken which will distinguish between public on-street (metered, resident, and unregulated) and off-street (on campus) spaces. This inventory should reflect the parking bans recently enacted in Newton, Brookline, and Boston.

The existing parking plan for the Middle Campus and Lower Campus will be presented. The inventory of existing on-site parking spaces will include: number of spaces; occupancy of spaces by user type, hour of peak occupancy, and peak high-occupancy vehicle spaces. Any parking spaces in facilities off-site which are owned or leased by Boston College will also be inventoried.

1.2.2 Demand. Parking demand will be discussed in terms of campus policies regarding vehicle use by students, faculty, staff, visitors and function attendees, and by use of standard parking generation methodology. Available information from the issuance of parking permits will also be used.

1.2.3 Local Conditions. Current parking use will be discussed, with particular reference to parking on City streets. The incidence of parking by Boston College students, staff, facility, visitors or function attendees on streets outside the campus proper will be identified through the means of license plate surveys, taken at the following locations and during the following times:

LOCATIONS:

- Lake St., from Commonwealth Ave. to Undine Rd.
- Foster St., from Commonwealth Ave. to Wiltsire St.
- Chestnut Hill Dr.

TIMES:

- an average weekday
- during a football game

For evening basketball games, a survey of the amount of available on-street parking will be performed.

For football games, particular attention should be paid to the impact of the parking bans recently enacted in Newton, Brookline, and Boston.

1.2.4 Areawide Conditions. For football game days, the survey of mode choice among ticket-holders described in Section 1.1.3 will be used to supplement the license plate incidence and location of off-campus parking will be presented.

In assessing relationship between supply and demand in the area between the College and Washington Street, the analysis will take into account the proposed Emergency Regulations regarding on-street parking in Brighton.

1.3 Transit. The operating characteristics of the College's private bus carrier services and Massachusetts Bay Transportation Authority (MBTA) services will be documented.

1.3.1 Present detailed description of existing College bus operations, including routes and schedules.

1.3.2 Evaluate operations: discuss safety and traffic efficiency of routes and stops, especially on local streets.

1.3.3 For football game days, perform ridership surveys to determine volume/capacity ratios on the following transit lines.

- Green Line C
- Green Line B
- Green Line D
- Bus Route 51
- Bus Route 86

1.4 Pedestrians. Pedestrian conditions on sidewalks and intersections adjacent to Lower Campus will be described. Describe major pedestrian corridors to and pathways within the Lower Campus. Estimate volumes of pedestrians using same. Describe conditions of corridors, including any deficiencies or barriers.

Pedestrian counts will be taken at the following crossings and sidewalk locations:

- Commonwealth Ave. at Lake St./More Dr.
- Commonwealth Ave. at Greycliff/Cemetery entrance
- Beacon St. at Thomas More Dr.

TASK 2 - EVALUATION OF TRANSPORTATION IMPACTS

The traffic impacts of proposed development, as described in the Master Plan, will be analyzed in detail. Expected long-term transportation conditions in the study area will be estimated and evaluated.

2.1 Development Scenarios. Future conditions will be presented for the year 2001 for two Scenarios:

1). Development as portrayed in the BRA-approved Boston College Master Plan for Physical Facilities Development.

2). Scenario 1), plus the addition to Alumni Stadium as described in the proposed amendment to the Master Plan.

Scenario 2) will have two Sub-scenarios: unmitigated, assuming the existing level of College effort with regard to reduction of vehicular trips and other transportation impacts; and mitigated, assuming the effects of the College's proposed transportation management plan. The mitigated Sub-scenario will indicate the respective contribution of each transportation mitigation strategy to the overall shift in trip generation and mode choice.

2.2 Traffic.

2.2.1 Trip Generation. Proposed development at the Lower Campus will be evaluated to determine person-trip generation characteristics, which will be translated into vehicle trips by use modal split and vehicle occupancy assumptions consistent with those used for other previously submitted Access Plans, or otherwise as approved by the BPD.

2.2.2 Trip Distribution. Estimations should be made of the probable origin of new trips to the site. Trip distribution is most appropriately described in terms of corridor of origin, e.g. Northwest, Southeast, etc.

2.2.3 Mode Choice. Mode choice assumptions will be made and presented for both the unmitigated and the mitigated versions of Scenario 2). Current mode split for existing similar land uses at the College will be applied to new trips.

2.2.4 Evaluation of Traffic Impacts. New trips expected to be attracted to the proposed development will be added to demands carried by the existing roadway system plus new trips from background projects. Morning and evening peak hour, daily and football game day increases will be developed and analyzed for all travel modes.

Traffic volumes in the design year and for morning and evening peak hour, daily and football game days will be projected for all study intersections. For those intersections and at those times at which it is determined that 10% or more of the traffic is generated by Boston College, a complete analysis of intersection level of service will be performed. At those intersections, volume-to-capacity ratio, available reserve capacity, level of service and delay calculations will be presented. Particular attention will be paid in intersection analysis to the intersection of automobiles, pedestrians and traffic vehicles.

2.3 Parking Impacts. Demands for parking generated by proposed projects will be calculated. Proposed new parking supply will be identified, for faculty, staff and students. Size of proposed parking garage will be related to new parking demand identified in this step.

The existence and impacts of the recently enacted parking bans in Newton, Brookline, and Boston should be fully considered in this analysis.

Parking operations will be described in detail. Allocation of new parking will be discussed, and projected effect on vehicle use among students, faculty and staff.

For the Scenario 2, the impact of the enlarged Alumni Stadium on parking conditions both on-campus and in the parking study area will be projected. Assumptions about off-campus parking, both within the parking study area and at remote locations, should be made explicit and should be consistent with assumptions about transit use and pedestrian activity.

2.4 Transit. The usage of public transportation will be described, and the impact of the project on transit services.

2.4.1 Determine effect of students moving on-campus, due to construction of dormitories, on need for College bus service.

2.4.2. Compare schedules of the College's bus carrier with those of MBTA services to identify redundancies.

2.4.3 Discuss the possibility of replacing diesel buses with environmentally superior technology.

2.4.4 Present and discuss the College's proposal to modify signalization at the intersection of Commonwealth Avenue and Colburne Rd. to permit bus U-turns.

2.4.5 Discuss effects of total elimination of College buses.

2.4.6 Under Scenario 2), estimate number of new trips on each transit line on football game days, and indicate effect of new trips on transit volume/capacity ratios.

2.5 Pedestrians. For Scenario 2), present projections of pedestrian volumes at the pedestrian study locations given in Section 1.4 on football game days.

For the mitigated subscenario, present also projections of pedestrian volumes at the MWRA Water Works building and along Beacon st. between Cleveland Circle and the College.

2.6 Site Circulation. - A detailed site plan shall be provided, showing campus access points, vehicular and pedestrian circulation system, and location of parking facilities with number of spaces.

2.7 Trucks and Service Vehicles - Truck and service vehicle volumes will be estimated. Access/egress to the site for tucks and emergency vehicles will also be provided.

TASK 3. EVALUATION OF SHORT TERM IMPACTS (Construction Period)

The transportation assessment will evaluate the impacts of construction of the projects contemplated in the Master Plan, and outline general policies for mitigating same. Specific construction management plans will be required for each project at the time of project review.

TASK 4 - DEVELOPMENT OF MITIGATION MEASURES.

The College's proposed transportation management plan should be presented in detail. In particular, each strategy should be discussed in terms of feasibility of its being implemented immediately, in advance of the possible expansion of Alumni Stadium. Strategies should also be identified which require the cooperation or participation of the City of Boston or other public entities. Source of funding for all mitigation improvements and programs should be identified.

In addition to the measures proposed in connection with the Alumni Stadium expansion, a program of measures to reduce the transportation impacts of the College's everyday operations will be developed and may include the following:

Creation of satellite parking facilities for faculty, staff and students.
Measures to minimize trip and traffic generation.
Roadway/traffic operation improvements.
Describe how problems identified in Sec. 1.3.4 might be resolved.
Parking management improvements.
Pedestrian improvements.
Long-term project impact monitoring.

Appendix 2

SUBMISSION REQUIREMENTS FOR DESIGN DEVELOPMENT AND CONTRACT DOCUMENTS SUBMISSIONS

Phase II Submission: Design Development

1. Revised written description of the Proposed Projects.

2. Revised site sections.

3. Revised site plan showing:

    a. Relationship of the proposed buildings and open space and existing adjacent buildings, open spaces, streets, and buildings and open spaces across streets.

    b. Proposed site improvements and amenities including paving, landscaping, lighting and street furniture.

    c. Building and site dimensions, including setbacks and other dimensions subject to zoning requirements.

    d. Any site improvements or areas proposed to be developed by some other party (including identification of responsible party).

    e. Proposed site grading, including typical existing and proposed grades at parcel lines.

4. Dimensional drawings at an appropriate scale (e.g., 1" = 8') developed from approved schematic design drawings which reflect the impact of proposed structural and mechanical systems on the appearance of exterior facades, interior public spaces, and roofscape including:

    a. Building plans

    b. Preliminary structural drawings

    c. Preliminary mechanical drawings

    d. Sections

    e. Elevations showing the Proposed Projects in the context of the surrounding area as required by the BRA to illustrate relationships or character, scale and materials.

5. Large-scale (e.g., 3/4" = 1'-10") typical exterior wall sections, elevations and details sufficient to describe specific architectural components and methods of their assembly.

6. Outline specifications of all materials for site improvements, exterior facades, roofscape, and interior public spaces.

7. Eye-level perspective drawings showing the Proposed Projects in the context of the surrounding area.

8. Samples of all proposed exterior materials.

9. Complete photo documentation (35 mm color slides) of above components including major changes from initial submission to the Proposed Project's approval.

Phase III Submission: Contract Documents

1. Final written description of the Proposed Projects.

2. A site plan showing all site development and landscape details for lighting, paving, planting, street furniture, utilities, grading, drainage, access, service, and parking.

3. Complete architectural and engineering drawings and specifications.

4. Full-size assemblies (at the project site) of exterior materials and details of construction.

5. Eye-level perspective drawings or presentation model that accurately represents the Proposed Projects, and a rendered site plan showing all adjacent existing and proposed structures, streets and site improvements.

6. Site and building plan at 1" - 100' for BRA's use in updating its 1" = 100" photogrammetric map sheets.

Phase IV Submission: Construction Inspection

1. All contract addenda, proposed change orders, and other modifications and revisions of approved contract documents which affect site improvements, exterior facades, roofscape, and interior public spaces shall be submitted to the BRA prior to taking effect.

2. Shop drawings of architectural components which differ from or were not fully described in contract documents.

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